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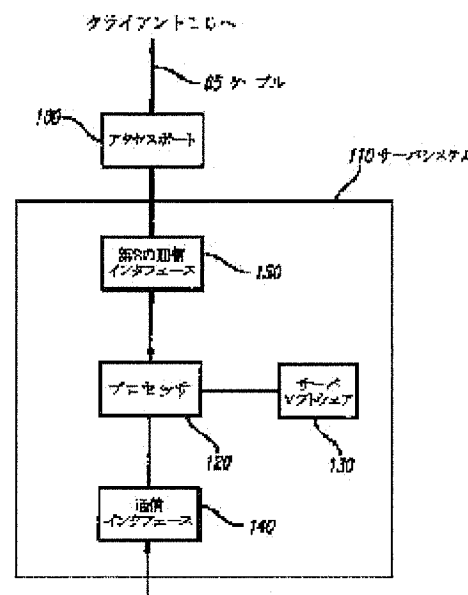
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(54) SYSTEM AND METHOD FOR COMMUNICATION NETWORK CONNECTION

(57)Abstract:

PROBLEM TO BE SOLVED: To dynamically provide a client computer with a network connection while including a task such as the change of static communication setting into dynamic setting by remotely connecting the client computer through a server system to a communication network such as an internet. SOLUTION: The using time of a network is recorded and according to that record, a user receives the demand of payment. Besides, the access software of a client computer 10 can be updated. In this case, an access port (hot access port) 160 is installed to be usable for client system access to extrude a welcome signal from a server system 110 to the access port



160. When the communication connection is installed between the client system 10 and the access port 160, the client system 10 receives the welcome signal.

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TECHNICAL FIELD

[Field of the Invention] This invention relates to the system and approach of building an electrical-communication link remotely between electrical-communication networks, such as the Internet or a wide range network, and communication devices, such as portable equipment.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the system chart of the typical client system concerning this invention.

[Drawing 2] It is the block diagram of the server system concerning this invention.

[Drawing 3] It is the block diagram showing the server concerning the gestalt of implementation of the 1st of this invention, and an access port.

[Drawing 4] It is a block diagram for explaining the gestalt of another implementation of this invention.

[Drawing 5] It is the block diagram showing the lodging server of this invention, and the gestalt of operation of an access port.

[Drawing 6] It is the block diagram showing BIRUSABA of this invention, and the gestalt of operation of an access port.

[Drawing 7] It is the block diagram of a server and an access port concerning the gestalt of implementation of this invention.

[Drawing 8] It is drawing showing the portable floppy disk which can do the writing of the activation code of this invention.

[Drawing 9] It is drawing showing the portable magnetic tape which can do the writing of the activation code of this invention.

[Drawing 10] It is drawing showing the portable optical disk which can do the writing of the activation code of this invention.

[Drawing 11] It is the display screen description which shows the display screen of the client system concerning the gestalt of implementation of this invention.

[Drawing 12] It is flow drawing showing actuation of the client software concerning this invention.

[Drawing 13] It is flow drawing explaining the client software concerning the gestalt of implementation of this invention.

[Drawing 14] They are other flow drawings explaining the client software concerning the gestalt of implementation of this invention.

[Drawing 15] They are other flow drawings explaining the client software concerning the gestalt of implementation of this invention.

[Drawing 16] It is the display screen description which shows the client structure-of-a-system screen concerning the gestalt of implementation of this invention.

[Drawing 17] It is the display screen description which shows the bill menu screen of the client system which the gestalt of implementation of this invention requires.

[Drawing 18] It is the display screen description which shows the connection period display of the client system concerning the gestalt of implementation of this invention.

[Drawing 19] It is flow drawing concerning the server system of this invention.

[Drawing 20] It is flow drawing concerning other viewpoints of the server system of this invention.

[Drawing 21] It is the display screen description which shows the connection cutoff display of the client system concerning the gestalt of implementation of this invention.

[Drawing 22] It is the display screen description which shows the bill screen of the client system concerning the gestalt of implementation of this invention.

[Drawing 23] It is description showing the module of the server software concerning the gestalt of implementation of this invention.

[Drawing 24] It is flow drawing connected with the gestalt of operation of the server system of this invention.

[Drawing 25] It is flow drawing connected with the gestalt of operation of the server system of this invention.

[Drawing 26] It is the block diagram of the network system concerning the gestalt of implementation of this invention.

[Drawing 27] It is the chart of the database configuration concerning the gestalt of implementation of this invention.

[Drawing 28] It is description of the operating system containing the client software of this invention.

[Drawing 29] It is flow drawing explaining a series of procedures which connect a client system and a server system.

[Drawing 30] It is the block diagram showing the usable access port concerning this invention.

[Drawing 31] It is flow drawing showing an example of this invention.

[Drawing 32] It is continuation drawing of flow drawing of drawing 31 showing an example of this invention.

[Description of Notations]

10 Client System

110 Server System

160 Access Port

MEANS

[Means for Solving the Problem] This invention mitigates the trouble generated on the occasion of the electrical-communication network connection from remoteness by offering the system made to connect two or more client systems to a server system through the communication link connected with the access port, and providing a client system with electrical-communication network access through a server system. In the gestalt of suitable operation of this invention, the client system which has a personal computer etc., and client connection software are connectable with the Internet through the server linked to server software. According to actuation of each client system, the claim amount of money is measured by server software, and is recorded. A server can communicate with network administration software through an electrical-communication network.

[0027] Server software leads each linked access port to a server, and pursues and controls an access trend. Server software is equipped with the billing function. They A server and each linked client system are provided with the option of a claim gestalt. Record an Invoicing method and it transmits to the system of authentication of the data of bill creation. The volition of license or denial is received from an authentication system, the signal of license or denial is transmitted to a client system, a client system use trend is measured, a log off time and a use count supervise, the claim amount of money is determined, and all work, such as adding to a bill, is achieved. By operating with server software, the client software which operates on a client system can establish required network connection, can offer the data for bill creation, and can perform initiation and termination of a log on period.

[0028] This invention uses the connection port of dedication and offers the Internet access in a high speed. Since the frequency and time amount in connection between a client system and an electrical-communication network are measured, it can ask based on the situation of system usage. A client system is constituted automatically and access to an electrical-communication system and creation of a bill are attained. Moreover, termination of a connection period restores the client structure of a system. In addition, the system software distinguishes whether connection was completed or not, in order to supervise a connection situation through an access port and to determine the claim amount of money. Moreover, network administration software offers network management from a distant location.

[0029] This invention makes it possible to perform electrical-communication system access at high speed by fitting the access port which is adapted with the gestalt of this operation for the traveler who is present in the place distant from the ship, public location, for example, hotel room, or the usual access location in addition to this in those locations. The increment activity of the high-speed electrical-communication network access line connected to the single server can be offered, and two or more users can access the server. The gestalt of other operations of this invention is a location to access, for example, are the buildings equipped with two or more chambers, such as an office building and an apartment, and offers the approach of the rapid access of an electrical-communication network.

[0030] With the gestalt of other operations, server software transmits active "well cam signal" ("welcome signal") toward the port arranged at each equipment. This active "well cam signal" is a pace for every per-second or Miri per second, and is transmitted continuously or intermittently. Client software will be applied as what receives an "on-well cam signal", once it connects. In addition,

communication link connection is made between the client systems and servers linked to client software. For example, client software is arranged on a client system and receives a "well cam signal" there. and other communication links which a cable or other wiring were connected to the client system, and were connected with the server -- or a link is installed between the client system connected to the interior, and a port. If such a link is installed, the "well cam signal" transmitted to the port from the server will be received by the client system through a link, and handshake processing and other initial setting will be performed.

[0031] With the gestalt of the operation to which access to the Internet is performed, network configuration and control point setting, such as an IP address and/or the DNS address, are transmitted to a client computer. In case setting out of these addresses etc. usually performs access to the Internet, it is required. A system offers a configuration and control point setting (namely, registration setting out), in order to access the Internet through the remote access port which can save the existing setting-out IP address, the configuration of client computers, such as DNS setting out, and control point setting, and can access a server system.

[0032]

[Embodiment of the Invention] This invention offers the system which establishes easy access to an electric (electron) communication network using mobile or portable client equipment. In this explanation, the computer system and multi-media system with which a user can perform remote access, a video system, etc. are included with a "electrical-communication network." Moreover, all of the Internet, an on-line service, a dialup computer server, a Wide Area Network, an electronic mail system, etc. are contained in an electrical-communication network. As for an electrical-communication network, in this explanation, it is desirable to be accessed by means to offer a user's (or client equipment) online access. for example, it is accessed by dialup access -- ISP, OSP and a computer server, and a video database server, an electronic bulletin board sir bus and a wide area NETOWAKU server are contained. The electrical-communication network defined by this explanation may also contain a single server computer which is seen in a single computer bulletin board system.

[0033] "Client equipment" given in this explanation or "client system" 10 are usually data processing system including the equipment used for access to an electrical-communication network. They contain all, such as various personal computers, the Internet station, TV, a palm computer, and a hand held computer and a notebook, a movable computer of a laptop type. In addition, when various operating systems and various programming language, such as "Windows" (trademark), "Windows 95" (trademark), "Macintosh" (trademark), "WindowsNT" (trademark), and "UNIX" (trademark), are used, the above-mentioned client equipment can use the system of this invention efficiently.

[0034] As shown in drawing 7 from drawing 1, the system and approach of this invention offer the client system (client equipment) 10. This client system 10 is linked to the server system 110 which provides the electrical-communication network (following, ECN) 310 with transmitting access, and accesses the electrical-communication networks 310 ("ECN"), such as the Internet, at a direct high speed using the access port 160 of the dedication installed in the public location.

[0035] The server system 110 is linked to the network administration server 410 through ECN310 if needed. As for the network administration server 410, it is desirable to perform network administration software which performs creation of processing of a bill, remote network

administration, and a utilization statistics report etc. With the gestalt of this operation, two or more server systems 110 communicate with the network administration server 410 by the below-mentioned approach.

[0036] As shown in drawing 1, the typical client system 10 is equipped with a central processing unit 20 ("CPU"). CPU20 minds a bus 30. Volatile memory 40 (RAM, random access memory), The nonvolatile memory 50, such as a disk drive, CD-ROM, and a data tape, The communication adapters 60, such as an Ethernet (Ethernet (trademark)) card (network communication adapter), The input units 70, such as a keyboard and/or pointing, or point click equipments (a mouse, a light pen, a touch screen, touchpad, etc.), It connects with output units, such as a video presentation screen and/or an audio loudspeaker, and removable equipments, such as the removable media drive 80 of a floppy disk, a CD-ROM drive, a PCMCIA port, a CD-WORM drive, a data tape, etc. The client system 10 processes the client software 90.

[0037] As shown in drawing 1, the client software 90 is saved at nonvolatile memory 50. However, it may be saved to the movable media accessed by the removable media drive 80. All or a part of client software 90 is loaded to volatile memory (RAM) 40 for example, during a period of operation.

Drawing 8, drawing 9, a floppy disk that is illustrated to drawing 10, a magnetic tape, and an optical disk are general movable media which memorize client software (which gestalten, such as a source code, compile-izing, and a binary version, are sufficient), respectively. In the gestalt of this operation, the client system 10 is a movable terminal and ECN (electrical-communication network) 310 is the Internet or an on-line service network.

[0038] Drawing 2 is the block diagram showing the server system 110. The client system 10 is connected to ECN (electrical-communication network)310 through the server system 110. The server system 110 has the processor (processor unit) 120. A processor 120 performs much software containing the server software 130 for carrying out the probability (establishment) of the communication link of the client system 10 and the electrical-communication network 310. About actuation of the server software 130, it mentions later. Generally, establishment of the communication link of the client system 10 and ECN (electrical-communication network)310 operates a server 110 as an interface between the client system 10 and the electrical-communication network 310. with the gestalt of this operation, the server system 110 has a communication interface 140 -- the communication link with ECN310 is enabled. Moreover, the communication link interface 140 contains a device required in order to communicate for example, the T1 transmission line, an ancillary device, etc. Furthermore, in order to enable the communication link with the client system access port 160, the 2nd interface 150 of a communication link is arranged. In addition, an access port 160 is an Ethernet communication link port. Moreover, the 2nd communication interface 150 receives a communication link from an access port 160 through a cable or radiocommunication. And the access port 160 and the client system 10 are constituted so that it may communicate using application **** Ethernet links, such as Ethernet card 60 built in the client system 10.

[0039] Drawing 8, drawing 9, and drawing 10 show the general movable media which memorize the server software (thing of gestalten, such as a source code, compile-izing, and a binary version) 130.

[0040] The server system 110 is T1 and ADSL. (Asymmetric Digital Subscriber Line unsymmetrical digital subscriber loop) It is desirable to perform a communication link with ECN310 through high-speed communication links, such as ISDN and other high-speed connecting means.

[0041] The communication interface relevant to the client system 60 and the server system 150 offers a high-speed throughput, and, thereby, enables enjoyment of the client system 10 of the advantage of the high-speed communication link established by the server 110. Furthermore, although communication interfaces 60 and 150 have desirable ** when the same band as the communication link established by a server 110 and ECN310 and a data throughput are offered, they are usable in the communication interfaces 60 and 150 of arbitration. In the gestalt of other operations, communication interfaces 60 and 150 offer a late throughput and a narrow band rather than a ***** thing by the link between the server system 110 and ECN310.

[0042] The access port 160 of all gestalten is usable, and a link is established between the access port 160 of the client system 110, and a communication adapter 60. With the gestalt of this operation, a communication adapter 60 is an Ethernet card and an access port 160 is RJ45 access jack.

[0043] The public location is provided with the access port 160, and it has the communication link to a server 110. It is the gestalt of the operation illustrated to drawing 3 , and although the server system 110 is a communication link station currently offered from ATCOM/Info. of California San Diego (it can purchase), the activity of other dedicated servers is also possible. An access port 160 is linked to the communication link station which plays a role of a server 110 which is arranged dispersedly and offers access to ECN310 through wiring 165. For example, 10BaseT Ethernet A cable is used. Or an access port 160 is linked through radiocommunication (a line 167 shows). At this time, a wireless transport unit is prepared in an access port 160, and a server 110 (especially interface 150) is equipped with a radio set. In addition, in the gestalt of operation, single UTP equipped with a signal transformation wireless transport unit is used.

[0044] In addition to the remote access performed through an access port 160, in order to access to a local communication network, the communication link station 110 can be arbitrary and can have a keyboard and a display. Furthermore with the gestalt of this operation, the access station (port) 160 is installed in public telephones, such as a telephone booth 169. the gestalt of other operations -- drawing 4 -- ***** -- other communication link stations 115 without the function as a server system 110 are linked to the server system 110 like. Such a communication link station 115 may be equipped with an access port 160.

[0045] In the example shown in drawing 5 , an access port 160 is installed in the chamber (a "hotel" is called henceforth) of the hotel in which the hotel server 210 is installed, and a motel. The local terminal 170 is installed in the chamber of a hotel. A local terminal 170 may be installed in a public location. Each local terminal 170 is equipped with a keyboard, a display, and CPU (not shown), and offers the function as a computer. An access port 160 is installed in a local terminal 170 by housing or separate housing of a local terminal 170. A local terminal 170 is linked to the hotel server 110 through wiring 165 or the radiocommunication link 167.

[0046] A local terminal 170 may be installed with other gestalten. For example, it may be installed in the cabin of a steam ship, the public field in cabin de luxe or a steam ship, etc.

[0047] Drawing 6 shows system configurations for which this invention is adapted, such as an office building and an apartment building. The access port 160 is installed in each housing building 172 or each office building 172 in which a server 110 is installed. In addition, the residence or the office building 172 is equipped with the local terminal 170 of a personal computer, a computing terminal, etc. The local terminal 170 is linked through an access port 160, a cable, or a radio link. For example,

the building is wired by the access port 160 prepared in the wall or the floor. The local terminal 170 is linked to a server 110 through wiring 165 or the radiocommunication link 167. It is the combination of two or more office buildings and/or a housing building, or the single server 110 may be shared in the location of other types.

[0048] In other examples shown in drawing 7, the client system 10 performs client software 90 under operating systems, such as a Windows 95 operating system, and communicates using communications protocols, such as TCP/IP. In addition, it does not pass over these to instantiation, but other operating systems and the activity of a communications protocol are also possible for them.

[0049] Two or more access ports 160 are connected to a hub 155, and this hub 155 is linked to the server system 110 through the 2nd communication interface 150. Moreover, an access port 160 may be connected to a server 110 through a Local Area Network. A server 110 is connected to a router 145 through a communication interface 140. a router 145 -- ECN310 -- or transmission is transmitted and received from ECN310.

[0050] In the gestalt of this operation, a user connects the cables 65, such as an Ethernet cable, to the communication link port 160 from the network communication adapter 60. And a user starts the client software 90 and establishes the communication link to ECN310 through the communication link port 160 and the server system 110.

[0051] The client software 90 is loaded to the client system 10 by means to perform client software. For example, the client software 90 may be downloaded from the site of the Internet. Moreover, you may carry out whether it is supplied through the movable media shown in drawing 8, drawing 9, and drawing 10, or it is loaded to the client system 10 through the direct link of a serial port etc.

[0052] The client software 90 may be built into the operating system. In this case, client software 90 is loaded to the client system 10 with the client system software.

[0053] the client system 10 -- the client software 90 -- a chair -- after carrying out a toll, it performs by the approach of arbitration. For example, an input device 70 is used, and from the alternative of the "start" menu of the operating system of Windows 95 etc., the client software 90 is chosen and it is started. Or you may start by clicking on the icon linked to the execution file. In addition, drawing 11 illustrates actuation by the desktop of Windows 95. The taskbar 510 of Windows is located under the display screen 75. In order to open the start menu which has the option (not shown) of the client software 90, a start button 515 is clicked with an input unit 70, and client software 90 is chosen and performed. Moreover, client software is performed even if it uses the "Run" option (not shown) in a start menu. With the gestalt of implementation of an illustration, an icon 520 is arranged corresponding to the client software 90. the client software 90 -- an input unit 70 -- it is -- specifying and pointing at the client software icon 520, or clicking **** -- etc. -- it is started by carrying out.

[0054] The processing in the gestalt of suitable operation of the client software 90 is illustrated by the flow chart of drawing 12. By the approach mentioned above, the client software 90 starts in step 610. The check of install and setting out is performed at the next steps 615 and 623 after starting.

[0055] With the install check of step 615, first, the client software 90 performs the install check of the component of the client software 90 required for actuation by the client system 10, and offers install of the software component which run short in the processing step 617 (presentation). When answerback of "Yes" is sent, the required software component which run short is installed at the following step 619 (when install of a lack component is directed). In addition, the means of arbitration

can also perform install in this case. for example, the case where an install file is already loaded to the client systems 10, such as nonvolatile memory 50, -- these instrumental - RUFAIRU is accessed. Moreover, install media, such as a floppy disk and CD-ROM, may be required of a user. In other examples, a system accesses the Internet homepage and an FTP site and downloads the demanded component.

[0056] In a suitable operation gestalt, the server software 130 is step 617, the required software component which run short is transmitted to the client system 10, and the client system 10 installs this.

[0057] Furthermore, the client software 90 may be updated to new software versions, such as an en HANSUDO version and an update version, by the same technique. For example, the server system 130 holds the latest version of client software to nonvolatile memory or a known remote FTP site.

[0058] If the client system 10 is connected to the server system 110 according to the procedure indicated here, the component with which the client software 90 was updated, and the software component which run short will be transmitted to the server system 110. Thus, a user can update client software.

[0059] Return install will be checked by step 615 if a component is installed at step 619. On the other hand, when "No" is chosen at step 617, if possible (not shown), as actuation is continued and is shown in the "termination" box of the reference number 612 in drawing 12 , actuation of the client software 90 will be ended.

[0060] If suitable install is performed, processing will progress to step 623 and various setting out of network configuration, registration setting out, etc. will be checked. As network configuration and registration setting out, an IP address, the gateway address, the DNS address, network log on selection, file-sharing setting out, browsing control point setting, and all the setting-out items about the network connection configuration by which others were stabilized are included. for example, a
 ***** [that pre- connection (session) was thoroughly completed using the client software 90 (completion)] -- or the check of whether the client software 90 has returned client system-network setting out to origin may be performed in this step.

[0061] It is desirable to return to standards setting conditions, such as a standards setting condition required at the time of termination of connection (session), in order to return client system-network setting out to origin (restoring or restoring) and to perform ECN access for the client system 90. A user is shown the option for setting setting out of criteria, such as standard network setting out, when such setting out does not accomplish correctly. This processing is shown in the box 625 of flow drawing. If "Yes" is chosen, setting out will be returned to origin, as shown in step 627 (restored), and will return to the box of step 623. On the other hand, if "No" is chosen in step 625, actuation of client software 90 will be ended as it will continue if possible (not shown), otherwise shown in the "termination" box of a reference number 621.

[0062] When setting out is performed correctly, these setting out (installation value) is saved in step 631 at the nonvolatile memory 50, such as a disk, (save). In addition, this step 631 may be performed any time, and is not performed at all, and its ** is also good.

[0063] Actuation of the client software 10 goes to the box 633 of drawing 12 . Then, it is accessed by network configuration and registration setting out, and network setting out and registration information are loaded to RAM memory 40. Such registration information is required of the gestalt of

typical operation in order to perform access to a server 110. At step 635, if the system software 90 is required, it will reboot the client system 10. For example, in a predetermined case, reboot is required for modification of network setting out. Reboot of a system continues processing from one point of the above-mentioned steps. For example, step 615 or step 623 shown in drawing 12, step 625, etc. continue processing according to a demand. However, actuation of the client software 10 is continued as it is shown by drawing 13 (shown by the continuation alphabetic character "A"), when a system does not reboot.

[0064] In the gestalt of suitable operation, network setting out and control point setting (namely, registration setting out) required for access to the Internet are offered. An example is shown in that of drawing 31 and drawing 32. Coordinate the step in this example with the above-mentioned step, and it is performed, or is replaced with the above-mentioned step. In this example, the client software 90 is started by the client system 10 shown in step 610. At the step at the time of performing the install check 615, a system distinguishes whether the component of the client software 90 was installed. In addition, the client software 90 confirms whether the client system 10 is constituted appropriately, in order to perform access to the Internet using the automatic connection system of this invention. For example, the judgment about the suitable network communication adapter 60 whether the Ethernet card is connected is performed, or the judgment about a communications protocol whether the software for TCP/IP networks is installed is performed. In this example, when install is not performed correctly, as shown in a reference number 810, software is ended. In this case, the message which shows a user the right setup approach is displayed on a display. On the other hand, a system is constituted or the client software 60 is ended, as shown in steps 617, 619, and 621 (not shown to drawing 31).

[0065] Processing is continued according to distinction of whether suitable network configuration and registration setting out were already set up in the client system 10, or if required, the suitable setting out will be offered. This is shown in steps 623, 625, 627, 631, 633, 641, 643, and 645 in drawing 12, drawing 13, drawing 14, and drawing 15, and/or 647. Moreover, the example of other steps of a series of, which make it possible to offer suitable setting out, is shown by the example illustrated to drawing 31. However, it is usable in the step of other arbitration which performs suitable setting out. In this example, the client system 10 is distinguished in the distinction step it is indicated to be to a box 820 whether it is constituted so that safe access to ECN(s)310, such as the Internet, may be performed using the automatic connection system of this invention. For example, the nonvolatile memory (hard disk etc.) 50 of a client system is checked [whether it is the configuration which the content does not share with other terminal systems, and] in an authentication step. If the configuration for performing safe access is performed to the client system 10 as checked in step 82, processing will advance to step 830 or step 623. Or the client system 10 is constituted so that safe access (not shown) may be realized, or it may end processing.

[0066] In down stream processing, in the example of drawing 31, various setting out at step 623 continues according to the decision of whether to already have been set up in the client system. When suitable setting out for connecting with ECN310 is already performed, processing progresses to step 633.

[0067] However, since special setting out of the special DNS address or a special IP address is required in many cases, many users choose "No." In this case, if already saved in the client system 10,

such special setting out (namely, standards setting of actuation by this system) will restore those setting out, as shown in steps 625 and 627 illustrated to drawing 12 (restored). And as shown in drawing 31, such special setting out may be inputted and registered. In this example, special setting out is offered from the external sources, such as a local network server or the server system 110 connected through an access port 160. In addition, they may be beforehand programmed in the client software 90. Although special setting out of this example is an IP address and the DNS address, setting out of arbitration is received, and it is registered and gets. It is distinguished whether it consists of a step 830 so that the client system 10 may receive an IP address. When the client system 10 is not constituted surely, client software changes the network configuration of a client system, and as shown in step 840, it receives an IP address automatically from a server etc. If assignment of an IP address is explained in detail, in order that a static twist may assign an IP address dynamically, the storage configuration of the client system 10 is changed. Then, in step 830, answerback of "Yes" or "No" is not concerned for whether being a carrier beam, but processing progresses to step 850. In addition, such a check step is applied to any system construction.

[0068] In the step of the arbitration of this processing, you may ask whether the client software 90 has the volition of an automatic configuration to a user. This request is shown by the box 850 with the gestalt of implementation of a graphic display. In "Yes", processing continues from step 860 where the existing setting out of IP address setting out, DNS address selection, etc. is saved. As for such setting out, it is desirable to be saved at both, such as long-term storage, such as temporary storage, such as volatile memory (RAM) 40, and nonvolatile memory 50.

[0069] If an IP address is changed into a dynamic thing at step 840, an IP address is reset and can set up at step 870 (setting out of a request of not only an IP address but others). In addition, special setting out (namely, special value over specific communication link setting out) applied to ECN connection using the system of this invention is set up in step 870. This is performed from the external source 875 through an access port 160 by receiving the predetermined value memorized with the client software 90, and the predetermined value saved in memory 50 and 40.

[0070] The model processing step for receiving an IP address is explained below in relation to steps 641, 643, and 645 from the external source etc.

[0071] Moreover, at step 880, the disable of the specific setting out of DNS address selection etc. is carried out, for example (set up impossible [setting out]). The gestalt of this operation offers the Internet access system of dedication using domain name service of dedication.

[0072] According to a demand, an option for a user to reboot a system is offered so that it may illustrate to step 890. Many of latest terminals require reboot and it performs special setting out. If a user chooses "Yes" and reboot is performed, the preparation which starts connection with ECN310 through an access port 160 will be completed. Processing can be continued as drawing 31 and the continuation alphabetic character "X" of 25 show. If "No" is chosen, setting out will be returned (restored) and the client software 90 will be ended.

[0073] The client system 10 is constituted by desired setting out, such as an IP address, following reboot. When the client system 10 reboots, special setting out offered at steps 870 and 880 is used in order to initialize the client system 10 (initialization), as shown in step 900. As shown in step 910 after initialization 900, setting out of an original copy is returned by returning from the long-term storage of memory (nonvolatile memory 50 and drive 80 are minded and they are removable media etc.).

This step may also contain the step which saves special setting out to nonvolatile memory 50 or the removable media 80 (save), in order to use it in relation to step 633 later. Such setting out is used when the client system 10 reboots next time. At this step, a system returns IP address setting out and/or DNS address selection which were saved at step 860 (save), for example. Thus, the client system 10 is returned to the configuration (saved at step 860) of an original copy after a communication link period (communication link session) with ECN310, and reboot. As shown in step 920, as for a client system, the preparation for connection with ECN310 is completed, and the client system 10 can communicate now to the Internet etc. through ECN310. The period (session) makes it possible to start with the various thing of the processing step described below. For example, it is also possible to start from bill creation steps, such as steps 648 and 649. however, the case where presetting is carried out etc. -- a bill creation step -- ***** -- there are things. In such a case, it starts from step 665 of explanation to the following.

[0074] With the gestalt of above-mentioned operation, before the client software 90 starts the client system 10 in the client system 10, it is connected to the port 160 connected with a server 110 through the wiring 65 between a communication adapter 60 and a port 160. In addition, gestalten of other connection, such as wireless connection, are also applicable. With the gestalt of other operations, the client software 90 begins to start in front rather than the client system 10 is wired through wiring 65 etc. in a port 160.

[0075] Drawing 13 shows the model connection step as a handshake (handshake step) in the gestalt of each operation. The client software 10 requests required information to a server 110 through an above-mentioned access port 160 and communication system (demand). For example, it is first transmitted to the network communication adapter 60 through a bus 30 from CPU20, and a request is transmitted to an access port 160 through wiring linked to the network communication adapter 60. And a request is transmitted to a server through either a cable 165 or the radio link 167 through the interface 150 in a server. Especially the requested information includes dynamic assignment of the IP address corresponding to the Local Area Network where a part is constituted as an access port 160, as the example which already has relation with step 870 of drawing 31 was shown. In addition, an IP address is the address of the proper for distinguishing a client system in a network context.

[0076] At step 643, it is reception and the following step desirably shown in a box 645, and assignment of a server to an IP address is saved in memory (memory of throats, such as removable media through RAM memory 40, nonvolatile memory 50, and/or drive 80). As shown in step 647 of drawing 13, the assigned IP address is reported to the server access control software which operates by the server 110 by client software. This system has a server 110 effective in distinguishing the specific client system 10, when two or more client systems 10 access a server 110 at a coincidence term, or when two or more access ports 160 are usable.

[0077] Drawing 14 shows other connection steps. When the acknowledge signal from a server is received as shown in step 643 after the authentication (check) request was transmitted from the client system 10 shown in step 641, the client software 90 passes through the distinction loop formation which performs periodical distinction. There, any authentication requests and acknowledge signals are also used and it gets. In addition, a check request is desirably for a server to assign an IP address to a client system, and an acknowledge signal is an IP address. Moreover, when an acknowledge signal is not received, as shown in step 641, other requests are transmitted to a server 110. In addition,

the client software 90 may transmit other requests after a temporary standby time, as shown in step 642. It is predetermined [the] or the calculated standby time is selectable by the user. For example, it is possible to choose the period of a microsecond, a ms, 1 second, 5 seconds, and others. The client software 90 can continue transmitting a request to a server 110 by using a processing loop formation in this way. Moreover, transmitting a request, when the client system 10 is not connected to the port 160 can be continued until it is received. Although the client system 10 can try transmission of a request by transmitting a request at step 641, however when there is another cause of the interruption at the time of being a communication link or cutoff when the client system 10 is not connected or (in the cases of the system in which the mistake is wiring-made and which is used, interference, a connection impossible-from port 160 server, etc.), a request is not transmitted to a server. In addition, if connection is completed, since a server 110 receives a request and acknowledge signals, such as an IP address, can be transmitted, processing of step 643 can be continued.

[0078] Drawing 15 illustrates other connection steps. At steps 638 and 639 of this drawing, the client software 90 distinguishes periodically whether the well cam signal 749 from a server 110 was received through a distinction loop formation. When the well cam signal 749 (it illustrates to drawing 29) is not received yet at this time, the client software 90 continues confirming whether it was received or not. In addition, since the standby time which is predetermined or was calculated is chosen by the user as shown in the standby step 639, the client software 90 checks a well cam signal after the fixed waiting period. For example, it is possible to choose over the period of a ms, 1 second, 5 seconds, and others for 1/1 million second. The client software 90 can wait for connection with a server 110 by using a processing loop formation in this way.

[0079] Moreover, a server transmits the active well cam signal 749 to which an usable port (hot port) is made to carry out the port of **** with the well cam signal with which each client system 10 to connect is provided to each port 160. Thus, if the client system 10 is connected and the software 90 starts, the well cam signal 749 can be received and handshaking can be begun. In addition, the signal of which gestalt is sufficient as the well cam signal 749. By this system, the well cam signal 749 can start the connection of communication system made through a server 110. Moreover, the server system 110 is not concerned with whether the client system is connected, but transmits the well cam signal 749 to all the ports 160. For example, before [, such as during a handshake period or the period between ECN310 and the client system 10,] being received, to behind, the well cam signal 749 continues in a port 160 by the server system 110, and is transmitted. Then, a port 160 can be in the condition of being usable (hot). On the other hand, a server 110 can interrupt transmission of the well cam signal 749 to the port 160 already connected to the client system 10.

[0080] When the client system 10 is not connected to the port 160, it can continue checking until it is received. And if a well cam signal is received, the KURAINTO system software 90 can progress to step 641, can transmit the request of an IP address to a server 110, and can continue handshaking. With the gestalt of other operations, advice of visual or acoustic-sense-is transmitted to a user about connection with a server. For example, the dial tone [**** / that an icon is displayed on a screen] "BI" occurs in a loudspeaker, or connection software is loaded. Authentication is transmitted in every phase of a handshake. As the arrow head to the outlet of a box 640 shows, as for it, being transmitted after reception of a well cam signal is desirable.

[0081] Drawing 13 , drawing 14 , and drawing 15 are made for the illustration object, and should

relate also to handshaking between a client system and ECN310. Steps 638 and 639, 641, 642, 643 in drawing 13, drawing 14, and drawing 15 may be connected, respectively.

[0082] If processing of the client software 90 shown in drawing 29 is started, a user will connect a cable 65 to a port 160 as a gestalt of this operation. A server continues transmitting the well cam signal 749 to a port 160 continuously or periodically, as shown in a sign 745. On the other hand, as shown in a box 910, the client software 90 is turned on in a client system. clicking on an icon **** -- a program menu -- or the client software 90 is turned on using functions of a Windows operating system, such as "Run." On the other hand, the on-command of the client software 90 is contained in the start-up phase of the client system 10. It also enables client software 90 to start always, when a client system starts. In the gestalt of this operation, client software operates in the background (namely, memory region) until it receives the well cam signal 749. In addition, with the gestalt of this operation, the client software 90 can start automatically interfaces, such as a browser which provides a user with an image environment, and special Internet access software. Then, as shown in a box 920, a client system waits for reception of the well cam signal relevant to steps 638 and 639. On the other hand, a client system transmits a request signal to a server 110 periodically, as shown in steps 641, 642, and 643 of drawing 14. Then, as shown in a box 930, a user connects a cable 65 to a port 160, and connects wiring between the client system 10 (or the adapter 60 there) and a port 160. Gestalten of other connection, such as wireless connection, are started in this step. The well cam signal 749 can be transmitted to the client system 10 from a port 160, as shown in a box 940. This is in agreement with the "Yes" line between steps 638 and 641 of drawing 15. And as shown in a sign 641, processing for performing initialization or handshaking is continued.

[0083] The access port 160 in the gestalt of this operation is an usable access port (hot access port), and can begin a communication link by the client system at any time. The illustration of drawing 30 is an usable access port applied to this invention. As shown in the drawing, the active well cam signal 749 is sent to an access port through the communication link from a server to an access port 160. In addition, although the link gestalt of wireless can be used, the wiring link 165 is illustrated. Since the access port has the well cam signal 749 which is not concerned with whether the client system is connected but is transmitted in the direction of an access port, it is usable and is the active emitter of the well cam signal 749 as a matter of fact. Drawing 30 shows the client system 10 connected to the usable access port 160 through a cable 65. Once a cable 65 is connected, a well cam signal will reach a client system through an access port and a cable 65. The wireless system which does not have a cable 65 is also used again.

[0084] Although access which is not measured or calculated with the gestalt of this operation can also be performed, the user of the client system 10 receives the claim of a tariff to access to ECN310. The example of the claim creation approach is with those with two, a time amount count claim, and a criteria claim of operation. In addition, when asking for bill creation, the client software 90 begins activation of the setup procedure by which credit card information etc. was saved in memory. With the gestalt of this operation, a user answers validity or credit card information on the content of a claim etc. in a setup phase. On the other hand, a client system is equipped with the credit card decoder (not shown) which reads the information on a credit card in the magnetic tape with which a user's credit card was encoded. The smart card which has the encoded computer chip on the other side, and the smart card reading comprehension machine (not shown) installed in the client system

10 can be used together.

[0085] At the next step of the gestalt of the operation about bill creation, client software checks whether bill creation information has been beforehand saved in memory. If the user saves bill creation information beforehand in the setup phase, reading appearance of this information can be carried out from memory at any time. On the other hand, software 90 checks the saved bill creation information, and in step 648, if found, "Yes" will be transmitted. Reversely, when not found reversely, a series of request processings about the bill information requested by the user are performed continuously (steps 649-653). With the gestalt of other operations, since it is unnecessary, bill creation is continued to step 665 as it is.

[0086] In step 648 of the gestalt of the illustrated operation, when answerback of "No" arrives, as shown in the box 649 of flow drawing, a server 110 can request a bill creation option. Moreover, it may set up like or the client software 90 may be equipped with the bill option "extrudes" a bill option and which is beforehand saved for the client software 90 so that the server software 130 may be transmitted automatically, or it may be made to have the bill option with which it is compensated using the information from a server 110. In the gestalt of suitable operation, a server 110 transmits the form of the bill software which provides the client software 90 with information through the connection explained on these descriptions. For example, a credit card, a prepaid access card, a smart card, the approach for which the bill of a hotel room is asked directly are included in such a bill option. If a bill option is received at step 651, in step 653, a bill optional menu or a series of menus will be expressed as the gestalt of the operation to illustrate. With the gestalt of this operation, the block of credit card information is displayed and the user of the client system 10 writes down a need matter in it. If the entry is completed, it will return to step 648 and down stream processing will continue, for example. When sufficient bill information is received, saved and inputted, as for bill information, it is desirable to be transmitted to the bill software which starts by the server 110.

Although such bill software is another software module, it is [the server software 130] desirable that it is a part of server software 130. This step is shown in a box 659. In order to perform the newest access and the newest bill report, as for this bill information, being saved at a server 110 is desirable.

[0087] If bill information is filled in and transmitted at step 659, it will this-approve or the server software 130 or a bill creation software component will deny bill information. As shown in step 661, the client software 90 waits for distinction of license or denial. This license processing is accomplished by transmitting information in the bill processing center through an ECN communication link. When bill creation is denied, as shown in a box 667, a message is displayed on a display 75 and a user is provided with options, such as another Invoicing method, further bill creation information, and termination of a communication link period, (namely, when refused). A user's decision matter is processed in a box 668. At this time, a user fills in another Invoicing method and other claim information, and if it clarifies that there is continuation volition, processing will return to step 649 (a bill option is requested) or step 653 (display of a bill menu). If it clarifies as "No" that there is no volition to which a user continues processing reversely, a communication link period will be ended.

[0088] As shown in step 661, license and a denial signal are transmitted to the client software 90 by the server software 130. In addition, if bill creation is approved, the server software 130 will give access to ECN310 to the client system 10 by enabling a trace of the IP address assigned to each client

system 10. With the gestalt of operation shown in drawing 7, the server software 130 enables access to the Internet 310 (a kind of ECN) by the client software 90 receiving distinction of yes or no by pursuing a user's IP address from a server 110 to ECN through an interface 140 and a router 145.

[0089] The box drawing 665 of drawing 9 shows an ECN access period. In the gestalt of this operation, since a user will access the Internet, the browser of all gestalten or the Internet access software of other gestalten is applied. For example, a user can connect with ECN of other gestalten, such as an on-line service. On the other hand, when a user accesses the dialup server which offers access to a dialup server or a Wide Area Network, a database, and electronic bulletin board system access, the option which makes starting of a telephone communication period possible is given.

[0090] In the period which is operating by the desktops 75, such as Windows 95, a display while having founded the display while the client software 90 loads, and the link to ECN310 is shown in drawing 16 as a model display screen display. TAKUSUBA 510 of Windows and a "start" carbon button are located down Screen 75. The active icon of the client software 90 is located in the lower left of Screen 75. "IDT" in the client software 90 may appoint other identifiers and notations. The activity box 545 is displayed on Screen 75. Since it means making connection, such an activity box 545 is expressed as the gestalt of this operation. The activity box 545 notifies being constituted in order that the client system 10 ("terminal") may perform access to ECN310 ("high-speed Internet access").

[0091] The screen shown in drawing 17 is a thing showing the model display screen of a bill option, and is the menu which displayed processing of step 653 of drawing 13. Various bill options are displayed and a user chooses a "claim gestalt" based on it. Various menu gestalten and a selection screen can be used and there may be an option how much. With this operation gestalt, a user can choose one from things, such as a credit card, a smart card, a hotel room claim, or a prepaid card. In addition, an option can be increased also to others, such as a debit card claim, a prepaid access card, Internet banking, and an electronic check. for example, the time of filling in a credit card number and a hotel room number -- reaching -- the dialogic-operation box otherwise arranged is applicable. For example, the dialogic-operation box at the time of filling in the expiration date of a credit card, the identifier of a credit card, or a prepaid access card number etc. can be used. Since many bill screens can be displayed simultaneously, the one-eyed screen is used as the screen of claim gestalt selection, for example with the gestalt of this operation. After being chosen, client software displays other screens (or there may be no next screen) according to claim gestalt selection. For example, if credit card payment is chosen, the next screen will display the form for filling in required data, such as a credit card number and an expiry date. On the other hand, the client software 90 may be equipped with the bill creation information saved beforehand for a credit card or prepaid credit data. With the gestalt of another operation, after selection of a bill gestalt, the client software 90 is loaded, if the data according to the claim gestalt saved are checked and found. However, when such data are not found, the client software 90 displays the screens for claim information entry (form etc.). Such bill-related enquiry, a menu, etc. are created by the server software 130, and are transmitted to the client system 10.

[0092] Drawing 18 is a thing illustrating the model display screen when ECN connection is completed, while the client software 90 is operating with operating systems, such as WINDOWS95, and it supports step 665 of drawing 13. It has the active icon 540 corresponding to the taskbar 510 of Windows, and the client software 90, and the minimized carbon button 550. In addition, it points out

using a mouse, a touchpad, and the input devices 70, such as a touch screen, or it clicks and the minimized carbon button 550 is chosen. After choosing there, the selection screen of the client software 90 is displayed. The selection screen is equipped with various options, such as a setup configuration and connection termination. Under connection, For example, a homepage, an on-line service, an electronic mail, and the ECN display 560 of the FTP menu etc. are displayed on a screen. [0093] With the client software 90 and the server software 130, work of various processing steps can begin during ECN connection. For example, the client software 90 sends the signal which checks continuation of ECN connection periodically to the server software 130. drawing -- ***** -- as long as -- the client software 90 transmits a control signal to the server software 130 every half a sum in order to display ECN connection. Drawing 19 illustrates the timing loop processing step started by the server software 130. As shown in drawing 19 , the server software 130 is equipped with the timer 721 which offers a clock signal. Since the precedence commuter's ticket acknowledge signal 724 from the client software 90 of the client system 10 is received in a timing loop after the clock signal 722 is received (here) It is judged whether the latency time for 5 minutes passed. And after the latency time passes, the server software 130 checks whether the fixed acknowledge signal 724 has been received. Then, when not received, the server software 130 ends ECN connection, as the processing step 726 shows. By ending ECN connection, the server software 130 releases the IP address assigned to the specific client system 10. In such examples, the client system software 90 cannot maintain connection with a server 130. However, if the "No" signal occurs at step 725, as shown in the processing step 727, server software will transmit a cutoff signal to the access port 160 to which the client system 10 was connected. In addition, if the client system 10 is still connected to the access port 160, the client software 90 will receive a cutoff signal, and will perform cutoff processing. The physical connection between an access port 160 and the client system 10 may be intercepted before passing through cutoff processing of client software (it indicates for details later). For example, a user may intercept the link of the cable between an access port 160 and the client system 10 etc. without starting cutoff processing. Or the connection between the client system 10 and a server 110 may be blocked before cutoff processing by the client software 90.

[0094] The server software 130 sends the signal which checks continuation of ECN connection periodically to the client software 90. The server software 130 sends the control signal which displays ECN connection on the client software 90 every half a sum. Moreover, server software transmits a polling signal to each client system 10 for every predetermined time amount periodically. This fixed polling signal requests the acknowledge signal answerback from each client system 10. By receiving the polling signal from server software, the client software 90 of the client system 10 can return an acknowledge signal. If an acknowledge signal is not returned, the server software 130 will end ECN connection of the specific client system 10, and will transmit a cutoff code to the access port 160 corresponding to the specific client system 10. However, when the client system 10 is connected to the access port, a cutoff code will be received and the client system software 90 will pass through cutoff processing.

[0095] The time of there being no reception of a fixed check, when "No" is transmitted at step 725, or when it is intercepted without connection between a server 110 and the client system 10 passing through cutoff processing (it describes below as drawing 20 shows) of client software and connection goes wrong, server software begins count of a bill and transmits bill data to a suitable claim firm or a

processing station through ECN310.

[0096] The cutoff processing which the client software 90 should perform is shown in drawing 20 . Under ECN connection (box 665 of drawing 13) etc. can be set working [client software], or the user of the client software 90 can start cutoff processing at what kind of time of others. This is performed by pointing out a cutoff carbon button ("communication link termination", or "off" or "a stop" being indicated) with the input devices 70, such as positioning or a click system. Such a cutoff request is shown by the box 731 of drawing 20 . And at step 732, the client software 90 displays the cutoff option screen 565, and a user checks cutoff. The model cutoff option screen 565 is shown in drawing 21 . It is possible to choose on this model cutoff option screen 565, namely, it is possible to make return connection in actuation of client software, such as for a user to approve the cutoff selection 567, or to deny the cutoff selection 569 and to return to ECN connection. In this example of drawing, a user intercepts by choosing 567 using click equipment, chooses 569, and makes connection. If an option 567 is chosen in actuation of the client software 90 (i.e., a check of cutoff returns "Yes" at step 733 of drawing 20 .) When approval of cutoff is not received by selection of an option 569, "No" is similarly returned at step 733.

[0097] If "Yes" is returned in step 733, as shown in step 734, client software will transmit a cutoff signal to the server software 130, and will request termination of an ECN communication link. On the other hand, if "No" is returned, client software will return to other processings of an audit trail, an ECN communication link, etc. A cutoff signal is transmitted to the bill processing part (it describes later) of the server software 130. As the processing step 735 to which reception of claim data is performed shows, the server software 130 reports claim data to the client software 90. Client software expresses claim data as the following step 737 according to the information received from the server software 130.

[0098] The model bill display screen 570 is shown and all data are expressed as this screen so that drawing 22 may be displayed in relation to step 737. Like the example of this drawing, a connect time 572 and the total amount of money 574 are displayed. The display of other data is also possible, for example, access, a commission, a hotel room tariff, an accompanying tariff, etc. to service are displayed. Moreover, the bill display screen 570 is piled up with other display screens, or is replaced and used, for example, the "Good-bye" screen and "log off" screen etc. is displayed. Other messages and alphabetic characters which are offered, such as various services, are expressed as a bill screen, a front screen or the front screen to continue, etc. Such other screens and messages are displayed in relation to the termination step 739 of drawing 21 .

[0099] Actuation of the client software 90 is ended at the termination step 739. A processing step does work for ending client software 90 before the termination step 739. In the gestalt of suitable operation, setting-out data are saved at nonvolatile memory 50. For example, saved network initial setting in step 631 is returned. In addition, a terminal is rebooted if needed. Actuation of the client software 90 is ended by this post process. By performing the termination step 739, the active icon 540 and the minimized icon 550 are not displayed on a taskbar 410 any longer.

[0100] The server software 130 is equipped with many functions, and after they communicate through many client SHIFUTEMU 10 and access ports 160, control a bill creation function, maintain the database for clients and supervise an access port 160, they transmit a message to ECN310 and communicate with a distant claim system and a distant network management system 410. Although

some functions of the server software 130 were explained, the function is outlined further. The server software 130 has the function to perform the communication link with the client system 10 and the client system software 90, and starts the ECN communication link between each client system 10 and ECN310. The server software 130 makes it possible to communicate with two or more client systems 10 at the same time it starts the client software 90. On the other hand, the single client system 10 is that either which communicates with the server software 130, or does not communicate. Moreover, server software is equipped with many functions to process actuation of the servers 110, such as initial setting and a port test.

[0101] The server software 130 is equipped with two or more modules and objects to connect in the gestalt of this operation. The graphic form description shown in drawing 23 is formed by a central processor 111, the bill creation module 112, the server link module 114, access-control MOJURU 116, and the system-failure module 117. This graphic form shows a pattern that these modules connect mutually and it operates. With the gestalt of other operations, these [all] crawl again and the module of shoes operates independently from other modules.

[0102] (Drawing 13) As shown in step 641, when the client software 90 requests dynamic IP address acquisition, the server software 130 (or access-control module 116) receives the request, and performs suitable answerback, it is step 643 behind and client software receives the answerback. Similarly, when the client software 90 requests a claim optional list at step 649, server software transmits the claim optional list which client software receives at step 651 behind. The trend of the server software 130 about this claim option is shown in drawing 24 and drawing 25. As shown in a box 751, the server software 130 receives the request from the client software 90. In step 755, when there is no reception of a request, as the arrow head of "No" shows, it waits as it is. On the other hand, reception of a request transmits a claim option to a client system according to "Yes" shown at step 759. And a server waits for the receipt check of bill creation information at step 763.

[0103] According to the transmitting loop formation shown with the signs 745, 746, and 747 of drawing 25, the server software 130 transmits the well cam signal 749 to a port 160. If the well cam signal 749 is transmitted, as shown in the check step of a sign 746, a system will distinguish the existence of reception of a receipt check. In the gestalt of the illustrated operation, the distinction step 746 distinguishes whether the request of an IP address was received, and performs distinction of other acknowledge signals similarly. If an acknowledge signal is not distinguished in step 746, a well cam signal will be returned and transmitted to step 745. in step 747, when it is resembled and it follows, when there is the latency time, or there is nothing, transmission of a well cam signal is performed as it is. In addition, it is predetermined or the calculated latency time is chosen. The server software 130 is not concerned with the existence of connection, but transmits the well cam signal 749 to all the assigned ports 160. If connection is made, the well cam signal 749 will be transmitted to the client system 10 through a port 160 as mentioned above. Moreover, although the well cam signal 749 can also include what kind of information, it connects with a server and its short thing which show things only r ***** is desirable. In addition, the signal is transmitted in an analog or digital one. In a digital case, the well cam signal 749 contains 1 bit, two or more bits, or a cutting tool.

[0104] If it distinguishes that the acknowledge signal was received at step 746, a server system will advance handshaking. In the gestalt of suitable operation, as shown in a box 748, server software transmits an IP address to the client system 10.

[0105] In the gestalt of the operation about the claim according to the access time, when the user of the client software 90 transmits claim information to server software at step 659, either server software or the bill creation module 112 starts claim license procedure. The server software's 130 receipt of this bill information carries out actuation shown by "Yes" of step 763. As shown in drawing 24 and drawing 25, with the gestalt of this operation, the server software 130 approves access to temporary ECN, even when bill license is not given, as step 767 shows, and that temporary license signal is transmitted to the client software 768. Effectiveness of this temporary access can be accessed by slight delay, if the time amount which cannot be accessed until bill license gets down eventually is taken into consideration. Moreover, the client software 90 displays the message which notifies that the user was permitted temporary access with the indicating equipment 75, while processing of bill license is continued. Temporary license and the last license are transmitted to the client software 90, as shown in step 661.

[0106] As shown in step 771, the server software 130 transmits bill creation information to a bill license server through ECN310 between bill license processings. In addition, when you need license of a credit card, a bill license server performs a duty of a credit secretariat or a credit card service server. On the other hand, a bill license request is transmitted to every bill license server through ECN310. For example, when the prepaid access card is used, a license request is transmitted to the issuance place of a prepaid access card.

[0107] A bill license server can approve processing, can carry out license with a credit, or can be denied. For example, when all the amounts of a prepaid access credit are consumed, processing is refused, but it will be approved if the credit card is effective. Steps 775 and 777 show actuation of receipt of license/objection. When approved at step 775, as shown in a box 776, a license signal is transmitted to the client software 90, and the trend of the receipt is shown in step 661. And valid-user information is added to the activity database maintained by the server 110.

[0108] Drawing 27 illustrates an activity database. Additional information and modification information are saved in this activity database. Data are shown as "XXX", "YYY", and "NNN" by this database for the illustration object. An activity database records the various information which shows the trend of a server. The various data in which a server, actuation of the access port 160 linked, and the condition of an access port 160 are shown especially are recorded. For example, ON/OFF state of an access port are recordable. The access port of an ON state records suitable User Information, such as ID, and claim information, login time. For example, the IP address of the client system imposed on the client system 10 as the temporary address; It is saved in the client system 60. client network card MAC Address; which is related hardware base certification -- server network card ID; which is a server interface card -- in order to make it in agreement at it of an external database, and a high speed The user name of the access port 160 used; as "N" which shows the ordinal number of the "1", "2", and the access port 160 of drawing 27 shows The port ID which is each access port number of each access port 160; Since it is connected with the chamber where the access port 160 was specified, on the occasion of an activity in a building, are convenient. Are used with the gestalt of operation of a hotel, a steam ship, a housing building, and an office building. Room number; A credit card, and a smart card and a prepaid card, The approach of paying chosen as claim options, such as addition of a debit card, an activity account, and a hotel room claim; The credit card number according to a claim option, The number of the prepaid access card published by the expiry date; service provider of the credit

card of the credit card holder name; claim option according to; claim options, such as an access card number and a debit card number, or a debit card; ON, OFF, or unusable which port status; -- it is shown whether access to the unsuccessful communicative count; bill server or the communicative unsuccessful network administration server 410 from the start time; client side which would be in the current port status for judging the sum total time amount of bill creation is possible -- [server] Bill server communication link condition; all data, such as bill server acknowledgement which maintains whether the selected license or advice of an objection of a bill option was transmitted, are further recorded on a database from a bill server system. In addition, other data can be recorded on a database, and the item of a database is changed while the condition of an access port 160 changes.

[0109] When reception of license is not performed, continuation of processing is performed from step 777. Moreover, reception of advice of an objection transmits an objection signal to the client software 90, as shown in step 779. Steps 661 and 667 of drawing 13 show receipt of the objection signal by the client software 90. In step 777, when the volition of an objection is not received, as the arrow head of "No" shows, it waits for advice of license or an objection.

[0110] Server software supervises the connection situation of a period that the client system 10 is communicating with the server 110. Or it is supervised with the server link monitor module 114. In addition, connection is interrupted for any reasons of cutoff of the unsuccessful and accidental cable of a client system, active jamming, etc. Moreover, if the intercepted connection is discovered, the server software 130 or the bill creation module 112 will transmit the final amount of money at that time to the bill server as a selected payment server.

[0111] In addition, if the server software 130 has a "patrol" function and the failure of a server system is found, it will reboot a system automatically. The item 117 of drawing 23 shows a system-failure module.

[0112] The server system 110 communicates with the network administration server 410 which starts network administration software. A network management system performs remote place management of two or more server systems 110. In the gestalt of suitable operation shown in drawing 26, the server system 110 communicates with two or more of the server systems 110 through ECN310 (or private network). One or more communication link stations 420 perform the communication link with the network administration server 410. In addition, the communication link station 420 is already indicated by this description. Moreover, a network administration server performs the communication link with the bill processing servers 430, such as a credit card processing firm. In addition, although a network administration server makes connection of dedication of the processing server 430 and proper, the communication link with a processing server is performed through ECN(s), such as the Internet. The network administration server 410 draws up performance documentation 440, and sends e-mail to a customer again. The list of the claim amount of money or activity statistics is indicated by such report.

[0113] In addition, the network administration server 410 operates the network administration software 450, and performs bill creation, remote network administration, and processing of an activity statistical report. In addition, as for the network administration software 450, it is desirable that a server 110 and the communication link station 420 are supervised, and calculation of an activity ratio, the monitor of an error situation, and the reboot demand from failure detection remoteness can be performed. With the gestalt of this operation, the network administration software 450 offers

advertising information to a server 110 and the communication link station 420, and updates that advertising information. Moreover, two or more servers 110 are used, and each server is the object which performs the communication link with one network administration server 410 (or two or more network administration servers 410), and is updated according to the approach of description.

[0114] In the gestalt of this operation, as shown in drawing 28, the client software 90 is built into the operating system of a client system. The operating system 810 possesses two or more programs and modules which were constituted so that it might adjust with actuation of client system 10 component. As shown in the example of a graphic display, an operating system 810 is formed from various components, such as a driver 815, the operating instruction set 820, and the client software 90. client software -- UNIX, MAC OS, and WINDOWS 95 -- and -- It is unified by operating systems, such as WINDOWS NT. With the gestalt of this operation, an operating system offers the user interface or desktop screen of the graphic form which can choose an icon and other selection carbon buttons easily using the input devices 70, such as a mouse, and a touchpad or a touch screen.

[0115] Thus, the system and approach about access and its actuation to a communication network are offered. This invention is not limited only to the gestalt of the suitable operation indicated by this description. The explanation shown here is not a thing aiming at a limit, but is explanation as instantiation.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the system and approach of building an electrical-communication link remotely between electrical-communication networks, such as the Internet or a wide range network, and communication devices, such as portable equipment.

[0002]

[Description of the Prior Art] The electric (electron) communication network is known widely and accessed by many users. An electronic communication network is represented by the Internet, an on-line service, electronic mail service, the Wide Area Network, etc.

[0003] In order to connect with such an electrical-communication network, many means exist. There is an Internet connectivity service provider (following, ISP) which offers an Internet access to each user as a typical thing. Netcom, UUNet, Erols, etc. are famous. The Internet uses packet-switching protocols, such as a TCP/IP protocol, as a common communications protocol, and is equipped with two or more computers which communicate mutually. On the other hand, an ISP system is connected to the Internet by connecting with the Internet centers, such as a supercomputer center which constitutes a part of backbone of the Internet, through a high-throughput telecom network.

[0004] There is connection made through an online service provider (following, OSP) as other approaches of accessing an electrical-communication network. OSP has a private communication network and has the additional communication network for connecting with some functions of the Internet through the private communication network. OSP offers supplementary services, such as electronic mail service which a private information database and the member of specific OSP perform, electronic report service, and a game. American Online, Compuserve, Prodigy, etc. have spread widely as OSP.

[0005] Once a telephone leads to OSP, ISP, etc., it means that the indirect Internet connectivity was attained through OSP or ISP, and on the Internet, a user will transmit a message or it will become possible to receive. In this description, through a communication network, a "message" is performed, for example, means the communication link of all formats, such as a digital signal, a URL request, a transfer of a HTML document, the JAVA code, an electronic mail message, a FTP transfer, voice music, a Telnet link, and GOPHER.

[0006] As a gestalt of other communication networks, "intranet", a Wide Area Network ("WAN"), etc. which are constituted individually are mentioned. A typical example is the system to which many computer apparatus of each other were connected in the enterprise. In case such intranet and WAN are accessed remotely, communication link special software, such as Remote Access, Wildcat!, and a Procomm software package, and dialup connection (it describes henceforth for details) are coordinated and used for them.

[0007] Dialup connection is widely used as a connection method to a communication network. Usually, the modem which dials the telephone number for network connection is connected to a user's terminal. Dialup connection is used in order to access other communication networks, for example, intranet, WAN, etc. of a gestalt from a remote place, while being used in order to access ISP and an OSP network. In for example, the case of ISP If a "handshake" accomplishes between a user

modem and an ISP modem, a connection procedure will be completed and a telecommunications access will become possible.

[0008] Such dialup connection has the fault of depending for many on the telephone line too much, in order to achieve connection. For example, actuation of a system will be determined by condition -- whether the activity of the dial tone of a telephone network is possible in whether the activity of a telephone network is possible. Furthermore, since it is restricted by the narrow band offered through the general telephone line, and the speed of an usable modem, there is a fault that the speed of connection is slow. The modulation rate of a common modem is 56,000 bauds from 14,400 bauds, and the further improvement is desired in order to obtain a high-speed speed more.

[0009] The approach of the dialup connection which used the ISDN telephone line and the modem for ISDN connection also exists. However, a fault is also generated while saying that a communication link is performed rather than connection with other modems at high speed. Connection is made in comparison at a low speed, and a telephone network is used for the object which founds the communication link between each user and a communication network. Although a wide band can be used more by the ISDN link, compared with what minded the direct link to the communication network, a band is still narrow. The ISDN-connection modem in current attains connection at the connection rate of about 128,000 bauds of highest.

[0010] In case the Internet is accessed, each user's terminal receives an IP address and the DNS address by service of the Internet communication link entrepreneurs, such as OSP and ISP. Usually, each user's terminal saves such addresses etc. once, and if modification is added, it will require a series of complicated procedures. For example, in order to change the IP address and the DNS address which were received once, the activity of carrying out the manual entry of many figures from a keyboard is needed. And special software, such as access software received from OSP or ISP, must be loaded, or it must perform. Furthermore, when it considers as the gestalt of access to which a user usually carries out access which uses OSP and ISP and asks for access to the Internet in another gestalt at the times, such as a travel, since each user's terminal is seldom equipped with flexibility, there is also a fault that a flexible response cannot be performed.

[0011] The further trouble is having to step on many steps, in case a traveler connects in a hotel or other locations. For example, in a hotel, although the modular jack is installed in telephone connection, the modular jack of hotel installation, and a portable terminal and other modular jacks with a built-in personal computer must be connected with the telephone line. Telephone wiring and the switchboard system of a hotel are the object which founds a telephone communication link, and are accessed by the telephone network which forwards a telephone through ISP, OSP, or other communication network inlet ports. This depends for many on wiring and telecommunication equipment of a hotel, and generates a series of troubles, such as an activity of the exclusive dial code for acquiring processing by comparatively late speed, and external telephone connection. When the terminal has accessed the telephone line, since the telephone line of the chamber of a hotel is used, the dialup user of a hotel can telephone or cannot receive a telephone.

[0012] Although other approaches for a traveler are connection through the modular jacks (RJ11 jack etc.) installed in public locations, such as a pub of a telephone booth or an airport, the above-mentioned trouble is similarly taken into consideration.

[0013] Other connection methods for travelers are using an online-communications station, and are

usable to many airports and hotel rooms, and a ferry bus stop and it at the station of an electric car etc. The model of such communication link stations can be obtained by ATCOM/Info.308 "G" Street, Sand Diego, and California 92101. The communication link station provides access to the Internet, access to OSP, and it with electronic mail service, and a tariff is credit card payment and can usually access telecommunication service according to a user's hope. Since a specific communication link station's being direct or T1 link is used for an Internet connectivity, wide band width of face and a high-throughput telecom network will be offered comparatively. Accessing an electrical-communication network has one fault only using the equipment supplied at the communication link station instead of a user's own terminal unit.

[0014] T1 link enables connection with a communication network by another approach. While wide band width of face and high-speed connection can be offered, there are also many problems that access using communication terminals, such as a personal computer which T1 link carries [comparatively high cost, the difficult install approach, and], and a micro terminal, is not performed widely. Moreover, T1 link cannot be used for mobile users, such as a traveler who is in a hotel or a public location.

[0015] A cable modem can also be used for the link to the Internet used through the system of cable television. When special access equipment and software are required, things, the point that migration is impossible, etc. are troubles of this system. Moreover, that a public field and the traveler who is in a hotel etc. can use it does not not much have cable modem access to a communication network. Like other cases, a complicated connection method must be required in the case of activities, such as a traveler, and wiring must be connected with the system of cable television.

[0016] 10BaseT(s) There is also the approach of constituting from a Local Area Network (LAN) using Ethernet cards, such as an Ethernet (trademark) card, and wiring and the communications protocol of dedication. The Ethernet card is used for many terminals including a portable terminal system, and the add-on type Ethernet card has spread widely. However, there is a trouble of not making dialup connection to an electrical-communication network, special network software, such as Novell Netware, must be made to have to incorporate, and a terminal with a built-in Ethernet card must be connected. Maintenance of such networks is complicated and requires a know how and a technique.

[0017] There are many terminals which connected both modems with the Ethernet card, an Ethernet card is used for the local electrical communication through LAN, and a modem is used for the dialup communication link to an external electrical-communication network. Moreover, troubles, such as high cost of the additional equipment, the further complication, an increment in terminal size, and weight increase that faces adaptation of two equipments, surface. The latter large size or the weight in a movable terminal are not a desirable thing. For a traveler, the increment in weight or size is inconvenient, is carried, is carried out, and is that of ** potatoes. The badness of the appearance of a terminal is also worried to the consumer who moreover likes a small electrical machinery and apparatus.

[0018] Therefore, it is necessary to draw the system and approach for accessing to the easier Internet in the home for the user who is in the place distant from a traveler or other usual locations, or office.

[0019] Therefore, the object of this invention is equipment demanded by the user, and is to offer the system for accessing an electrical-communication network (that is, the size and cost of "client equipment" are reduced).

[0020] Other objects of this invention are offering the system and approach for changing an IP address and/or the DNS address automatically in each user's terminal.

[0021] Moreover, the object of this invention is offering the system and approach for accessing an electrical-communication network at high speed.

[0022] The further object of this invention is offering the system which performs access from remoteness to a high-speed electrical-communication network, and an approach to the user especially disconnected from the traveler or the usual access site.

[0023] Other objects of this invention offer the Internet access and online service access which are performed using a traveler's own terminals, such as laptop, a note type, and other personal digital assistants.

[0024] And other objects of this invention are offering the easier system and easier approach for accessing an electrical-communication system.

[0025] The further object of this invention is to offer the collection-of-money approach for network access to which control was careful, and access from various locations, such as a rental housing building and an office screw.

[0026]

[Means for Solving the Problem] This invention mitigates the trouble generated on the occasion of the electrical-communication network connection from remoteness by offering the system made to connect two or more client systems to a server system through the communication link connected with the access port, and providing a client system with electrical-communication network access through a server system. In the gestalt of suitable operation of this invention, the client system which has a personal computer etc., and client connection software are connectable with the Internet through the server linked to server software. According to actuation of each client system, the claim amount of money is measured by server software, and is recorded. A server can communicate with network administration software through an electrical-communication network.

[0027] Server software leads each linked access port to a server, and pursues and controls an access trend. Server software is equipped with the billing function. They A server and each linked client system are provided with the option of a claim gestalt. Record an Invoicing method and it transmits to the system of authentication of the data of bill creation. The volition of license or denial is received from an authentication system, the signal of license or denial is transmitted to a client system, a client system use trend is measured, a log off time and a use count supervise, the claim amount of money is determined, and all work, such as adding to a bill, is achieved. By operating with server software, the client software which operates on a client system can establish required network connection, can offer the data for bill creation, and can perform initiation and termination of a log on period.

[0028] This invention uses the connection port of dedication and offers the Internet access in a high speed. Since the frequency and time amount in connection between a client system and an electrical-communication network are measured, it can ask based on the situation of system usage. A client system is constituted automatically and access to an electrical-communication system and creation of a bill are attained. Moreover, termination of a connection period restores the client structure of a system. In addition, the system software distinguishes whether connection was completed or not, in order to supervise a connection situation through an access port and to determine the claim amount of money. Moreover, network administration software offers network management from a distant

location.

[0029] This invention makes it possible to perform electrical-communication system access at high speed by fitting the access port which is adapted with the gestalt of this operation for the traveler who is present in the place distant from the ship, public location, for example, hotel room, or the usual access location in addition to this in those locations. The increment activity of the high-speed electrical-communication network access line connected to the single server can be offered, and two or more users can access the server. The gestalt of other operations of this invention is a location to access, for example, are the buildings equipped with two or more chambers, such as an office building and an apartment, and offers the approach of the rapid access of an electrical-communication network.

[0030] With the gestalt of other operations, server software transmits active "well cam signal" ("welcome signal") toward the port arranged at each equipment. This active "well cam signal" is a pace for every per-second or Miri per second, and is transmitted continuously or intermittently. Client software will be applied as what receives an "on-well cam signal", once it connects. In addition, communication link connection is made between the client systems and servers linked to client software. For example, client software is arranged on a client system and receives a "well cam signal" there. and other communication links which a cable or other wiring were connected to the client system, and were connected with the server -- or a link is installed between the client system connected to the interior, and a port. If such a link is installed, the "well cam signal" transmitted to the port from the server will be received by the client system through a link, and handshake processing and other initial setting will be performed.

[0031] With the gestalt of the operation to which access to the Internet is performed, network configuration and control point setting, such as an IP address and/or the DNS address, are transmitted to a client computer. In case setting out of these addresses etc. usually performs access to the Internet, it is required. A system offers a configuration and control point setting (namely, registration setting out), in order to access the Internet through the remote access port which can save the existing setting-out IP address, the configuration of client computers, such as DNS setting out, and control point setting, and can access a server system.

[0032]

[Embodiment of the Invention] This invention offers the system which establishes easy access to an electric (electron) communication network using mobile or portable client equipment. In this explanation, the computer system and multi-media system with which a user can perform remote access, a video system, etc. are included with a "electrical-communication network." Moreover, all of the Internet, an on-line service, a dialup computer server, a Wide Area Network, an electronic mail system, etc. are contained in an electrical-communication network. As for an electrical-communication network, in this explanation, it is desirable to be accessed by means to offer a user's (or client equipment) online access. for example, it is accessed by dialup access -- ISP, OSP and a computer server, and a video database server, an electronic bulletin board sir bus and a wide area NETOWAKU server are contained. The electrical-communication network defined by this explanation may also contain a single server computer which is seen in a single computer bulletin board system.

[0033] "Client equipment" given in this explanation or "client system" 10 are usually data processing

system including the equipment used for access to an electrical-communication network. They contain all, such as various personal computers, the Internet station, TV, a palm computer, and a hand held computer and a notebook, a movable computer of a laptop type. In addition, when various operating systems and various programming language, such as "Windows" (trademark), "Windows 95" (trademark), "Macintosh" (trademark), "WindowsNT" (trademark), and "UNIX" (trademark), are used, the above-mentioned client equipment can use the system of this invention efficiently.

[0034] As shown in drawing 7 from drawing 1, the system and approach of this invention offer the client system (client equipment) 10. This client system 10 is linked to the server system 110 which provides the electrical-communication network (following, ECN) 310 with transmitting access, and accesses the electrical-communication networks 310 ("ECN"), such as the Internet, at a direct high speed using the access port 160 of the dedication installed in the public location.

[0035] The server system 110 is linked to the network administration server 410 through ECN310 if needed. As for the network administration server 410, it is desirable to perform network administration software which performs creation of processing of a bill, remote network administration, and a utilization statistics report etc. With the gestalt of this operation, two or more server systems 110 communicate with the network administration server 410 by the below-mentioned approach.

[0036] As shown in drawing 1, the typical client system 10 is equipped with a central processing unit 20 ("CPU"). CPU20 minds a bus 30. Volatile memory 40 (RAM, random access memory), The nonvolatile memory 50, such as a disk drive, CD-ROM, and a data tape, The communication adapters 60, such as an Ethernet (Ethernet (trademark)) card (network communication adapter), The input units 70, such as a keyboard and/or pointing, or point click equipments (a mouse, a light pen, a touch screen, touchpad, etc.), It connects with output units, such as a video presentation screen and/or an audio loudspeaker, and removable equipments, such as the removable media drive 80 of a floppy disk, a CD-ROM drive, a PCMCIA port, a CD-WORM drive, a data tape, etc. The client system 10 processes the client software 90.

[0037] As shown in drawing 1, the client software 90 is saved at nonvolatile memory 50. However, it may be saved to the movable media accessed by the removable media drive 80. All or a part of client software 90 is loaded to volatile memory (RAM) 40 for example, during a period of operation. Drawing 8, drawing 9, a floppy disk that is illustrated to drawing 10, a magnetic tape, and an optical disk are general movable media which memorize client software (which gestalten, such as a source code, compile-izing, and a binary version, are sufficient), respectively. In the gestalt of this operation, the client system 10 is a movable terminal and ECN (electrical-communication network) 310 is the Internet or an on-line service network.

[0038] Drawing 2 is the block diagram showing the server system 110. The client system 10 is connected to ECN (electrical-communication network)310 through the server system 110. The server system 110 has the processor (processor unit) 120. A processor 120 performs much software containing the server software 130 for carrying out the probability (establishment) of the communication link of the client system 10 and the electrical-communication network 310. About actuation of the server software 130, it mentions later. Generally, establishment of the communication link of the client system 10 and ECN (electrical-communication network)310 operates a server 110 as an interface between the client system 10 and the electrical-communication network 310. with the

gestalt of this operation, the server system 110 has a communication interface 140 -- the communication link with ECN310 is enabled. Moreover, the communication link interface 140 contains a device required in order to communicate for example, the T1 transmission line, an ancillary device, etc. Furthermore, in order to enable the communication link with the client system access port 160, the 2nd interface 150 of a communication link is arranged. In addition, an access port 160 is an Ethernet communication link port. Moreover, the 2nd communication interface 150 receives a communication link from an access port 160 through a cable or radiocommunication. And the access port 160 and the client system 10 are constituted so that it may communicate using application **** Ethernet links, such as Ethernet card 60 built in the client system 10.

[0039] Drawing 8 , drawing 9 , and drawing 10 show the general movable media which memorize the server software (thing of gestalten, such as a source code, compile-izing, and a binary version) 130.

[0040] The server system 110 is T1 and ADSL. (Asymmetric Digital Subscriber Line unsymmetrical digital subscriber loop) It is desirable to perform a communication link with ECN310 through high-speed communication links, such as ISDN and other high-speed connecting means.

[0041] The communication interface relevant to the client system 60 and the server system 150 offers a high-speed throughput, and, thereby, enables enjoyment of the client system 10 of the advantage of the high-speed communication link established by the server 110. Furthermore, although communication interfaces 60 and 150 have desirable ** when the same band as the communication link established by a server 110 and ECN310 and a data throughput are offered, they are usable in the communication interfaces 60 and 150 of arbitration. In the gestalt of other operations, communication interfaces 60 and 150 offer a late throughput and a narrow band rather than a ***** thing by the link between the server system 110 and ECN310.

[0042] The access port 160 of all gestalten is usable, and a link is established between the access port 160 of the client system 110, and a communication adapter 60. With the gestalt of this operation, a communication adapter 60 is an Ethernet card and an access port 160 is RJ45 access jack.

[0043] The public location is provided with the access port 160, and it has the communication link to a server 110. It is the gestalt of the operation illustrated to drawing 3 , and although the server system 110 is a communication link station currently offered from ATCOM/Info. of California San Diego (it can purchase), the activity of other dedicated servers is also possible. An access port 160 is linked to the communication link station which plays a role of a server 110 which is arranged dispersedly and offers access to ECN310 through wiring 165. For example, 10BaseT Ethernet A cable is used. Or an access port 160 is linked through radiocommunication (a line 167 shows). At this time, a wireless transport unit is prepared in an access port 160, and a server 110 (especially interface 150) is equipped with a radio set. In addition, in the gestalt of operation, single UTP equipped with a signal transformation wireless transport unit is used.

[0044] In addition to the remote access performed through an access port 160, in order to access to a local communication network, the communication link station 110 can be arbitrary and can have a keyboard and a display. Furthermore with the gestalt of this operation, the access station (port) 160 is installed in public telephones, such as a telephone booth 169. the gestalt of other operations -- drawing 4 -- ***** -- other communication link stations 115 without the function as a server system 110 are linked to the server system 110 like. Such a communication link station 115 may be equipped with an access port 160.

[0045] In the example shown in drawing 5, an access port 160 is installed in the chamber (a "hotel" is called henceforth) of the hotel in which the hotel server 210 is installed, and a motel. The local terminal 170 is installed in the chamber of a hotel. A local terminal 170 may be installed in a public location. Each local terminal 170 is equipped with a keyboard, a display, and CPU (not shown), and offers the function as a computer. An access port 160 is installed in a local terminal 170 by housing or separate housing of a local terminal 170. A local terminal 170 is linked to the hotel server 110 through wiring 165 or the radiocommunication link 167.

[0046] A local terminal 170 may be installed with other gestalten. For example, it may be installed in the cabin of a steam ship, the public field in cabin de luxe or a steam ship, etc.

[0047] Drawing 6 shows system configurations for which this invention is adapted, such as an office building and an apartment building. The access port 160 is installed in each housing building 172 or each office building 172 in which a server 110 is installed. In addition, the residence or the office building 172 is equipped with the local terminal 170 of a personal computer, a computing terminal, etc. The local terminal 170 is linked through an access port 160, a cable, or a radio link. For example, the building is wired by the access port 160 prepared in the wall or the floor. The local terminal 170 is linked to a server 110 through wiring 165 or the radiocommunication link 167. It is the combination of two or more office buildings and/or a housing building, or the single server 110 may be shared in the location of other types.

[0048] In other examples shown in drawing 7, the client system 10 performs client software 90 under operating systems, such as a Windows 95 operating system, and communicates using communications protocols, such as TCP/IP. In addition, it does not pass over these to instantiation, but other operating systems and the activity of a communications protocol are also possible for them.

[0049] Two or more access ports 160 are connected to a hub 155, and this hub 155 is linked to the server system 110 through the 2nd communication interface 150. Moreover, an access port 160 may be connected to a server 110 through a Local Area Network. A server 110 is connected to a router 145 through a communication interface 140. a router 145 -- ECN310 -- or transmission is transmitted and received from ECN310.

[0050] In the gestalt of this operation, a user connects the cables 65, such as an Ethernet cable, to the communication link port 160 from the network communication adapter 60. And a user starts the client software 90 and establishes the communication link to ECN310 through the communication link port 160 and the server system 110.

[0051] The client software 90 is loaded to the client system 10 by means to perform client software. For example, the client software 90 may be downloaded from the site of the Internet. Moreover, you may carry out whether it is supplied through the movable media shown in drawing 8, drawing 9, and drawing 10, or it is loaded to the client system 10 through the direct link of a serial port etc.

[0052] The client software 90 may be built into the operating system. In this case, client software 90 is loaded to the client system 10 with the client system software.

[0053] the client system 10 -- the client software 90 -- a chair -- after carrying out a toll, it performs by the approach of arbitration. For example, an input device 70 is used, and from the alternative of the "start" menu of the operating system of Windows 95 etc., the client software 90 is chosen and it is started. Or you may start by clicking on the icon linked to the execution file. In addition, drawing 11 illustrates actuation by the desktop of Windows 95. The taskbar 510 of Windows is located under the

display screen 75. In order to open the start menu which has the option (not shown) of the client software 90, a start button 515 is clicked with an input unit 70, and client software 90 is chosen and performed. Moreover, client software is performed even if it uses the "Run" option (not shown) in a start menu. With the gestalt of implementation of an illustration, an icon 520 is arranged corresponding to the client software 90. the client software 90 -- an input unit 70 -- it is -- specifying and pointing at the client software icon 520, or clicking **** -- etc. -- it is started by carrying out.

[0054] The processing in the gestalt of suitable operation of the client software 90 is illustrated by the flow chart of drawing 12 . By the approach mentioned above, the client software 90 starts in step 610. The check of install and setting out is performed at the next steps 615 and 623 after starting.

[0055] With the install check of step 615, first, the client software 90 performs the install check of the component of the client software 90 required for actuation by the client system 10, and offers install of the software component which run short in the processing step 617 (presentation). When answerback of "Yes" is sent, the required software component which run short is installed at the following step 619 (when install of a lack component is directed). In addition, the means of arbitration can also perform install in this case. for example, the case where an install file is already loaded to the client systems 10, such as nonvolatile memory 50, -- these instrumental - RUFAIRU is accessed. Moreover, install media, such as a floppy disk and CD-ROM, may be required of a user. In other examples, a system accesses the Internet homepage and an FTP site and downloads the demanded component.

[0056] In a suitable operation gestalt, the server software 130 is step 617, the required software component which run short is transmitted to the client system 10, and the client system 10 installs this.

[0057] Furthermore, the client software 90 may be updated to new software versions, such as an enhanced version and an update version, by the same technique. For example, the server system 130 holds the latest version of client software to nonvolatile memory or a known remote FTP site.

[0058] If the client system 10 is connected to the server system 110 according to the procedure indicated here, the component with which the client software 90 was updated, and the software component which run short will be transmitted to the server system 110. Thus, a user can update client software.

[0059] Return install will be checked by step 615 if a component is installed at step 619. On the other hand, when "No" is chosen at step 617, if possible (not shown), as actuation is continued and is shown in the "termination" box of the reference number 612 in drawing 12 , actuation of the client software 90 will be ended.

[0060] If suitable install is performed, processing will progress to step 623 and various setting out of network configuration, registration setting out, etc. will be checked. As network configuration and registration setting out, an IP address, the gateway address, the DNS address, network log on selection, file-sharing setting out, browsing control point setting, and all the setting-out items about the network connection configuration by which others were stabilized are included. for example, a ***** [that pre- connection (session) was thoroughly completed using the client software 90 (completion)] -- or the check of whether the client software 90 has returned client system-network setting out to origin may be performed in this step.

[0061] It is desirable to return to standards setting conditions, such as a standards setting condition

required at the time of termination of connection (session), in order to return client system-network setting out to origin (restoring or restoring) and to perform ECN access for the client system 90. A user is shown the option for setting setting out of criteria, such as standard network setting out, when such setting out does not accomplish correctly. This processing is shown in the box 625 of flow drawing. If "Yes" is chosen, setting out will be returned to origin, as shown in step 627 (restored), and will return to the box of step 623. On the other hand, if "No" is chosen in step 625, actuation of client software 90 will be ended as it will continue if possible (not shown), otherwise shown in the "termination" box of a reference number 621.

[0062] When setting out is performed correctly, these setting out (installation value) is saved in step 631 at the nonvolatile memory 50, such as a disk, (save). In addition, this step 631 may be performed any time, and is not performed at all, and its ** is also good.

[0063] Actuation of the client software 10 goes to the box 633 of drawing 12 . Then, it is accessed by network configuration and registration setting out, and network setting out and registration information are loaded to RAM memory 40. Such registration information is required of the gestalt of typical operation in order to perform access to a server 110. At step 635, if the system software 90 is required, it will reboot the client system 10. For example, in a predetermined case, reboot is required for modification of network setting out. Reboot of a system continues processing from one point of the above-mentioned steps. For example, step 615 or step 623 shown in drawing 12, step 625, etc. continue processing according to a demand. However, actuation of the client software 10 is continued as it is shown by drawing 13 (shown by the continuation alphabetic character "A"), when a system does not reboot.

[0064] In the gestalt of suitable operation, network setting out and control point setting (namely, registration setting out) required for access to the Internet are offered. An example is shown in that of drawing 31 and drawing 32 . Coordinate the step in this example with the above-mentioned step, and it is performed, or is replaced with the above-mentioned step. In this example, the client software 90 is started by the client system 10 shown in step 610. At the step at the time of performing the install check 615, a system distinguishes whether the component of the client software 90 was installed. In addition, the client software 90 confirms whether the client system 10 is constituted appropriately, in order to perform access to the Internet using the automatic connection system of this invention. For example, the judgment about the suitable network communication adapter 60 whether the Ethernet card is connected is performed, or the judgment about a communications protocol whether the software for TCP/IP networks is installed is performed. In this example, when install is not performed correctly, as shown in a reference number 810, software is ended. In this case, the message which shows a user the right setup approach is displayed on a display. On the other hand, a system is constituted or the client software 60 is ended, as shown in steps 617, 619, and 621 (not shown to drawing 31).

[0065] Processing is continued according to distinction of whether suitable network configuration and registration setting out were already set up in the client system 10, or if required, the suitable setting out will be offered. This is shown in steps 623, 625, 627, 631, 633, 641, 643, and 645 in drawing 12 , drawing 13 , drawing 14 , and drawing 15 , and/or 647. Moreover, the example of other steps of a series of, which make it possible to offer suitable setting out, is shown by the example illustrated to drawing 31 . However, it is usable in the step of other arbitration which performs suitable setting out.

In this example, the client system 10 is distinguished in the distinction step it is indicated to be to a box 820 whether it is constituted so that safe access to ECN(s)310, such as the Internet, may be performed using the automatic connection system of this invention. For example, the nonvolatile memory (hard disk etc.) 50 of a client system is checked [whether it is the configuration which the content does not share with other terminal systems, and] in an authentication step. If the configuration for performing safe access is performed to the client system 10 as checked in step 82, processing will advance to step 830 or step 623. Or the client system 10 is constituted so that safe access (not shown) may be realized, or it may end processing.

[0066] In down stream processing, in the example of drawing 31 , various setting out at step 623 continues according to the decision of whether to already have been set up in the client system. When suitable setting out for connecting with ECN310 is already performed, processing progresses to step 633.

[0067] However, since special setting out of the special DNS address or a special IP address is required in many cases, many users choose "No." In this case, if already saved in the client system 10, such special setting out (namely, standards setting of actuation by this system) will restore those setting out, as shown in steps 625 and 627 illustrated to drawing 12 (restored). And as shown in drawing 31 , such special setting out may be inputted and registered. In this example, special setting out is offered from the external sources, such as a local network server or the server system 110 connected through an access port 160. In addition, they may be beforehand programmed in the client software 90. Although special setting out of this example is an IP address and the DNS address, setting out of arbitration is received, and it is registered and gets. It is distinguished whether it consists of a step 830 so that the client system 10 may receive an IP address. When the client system 10 is not constituted surely, client software changes the network configuration of a client system, and as shown in step 840, it receives an IP address automatically from a server etc. If assignment of an IP address is explained in detail, in order that a static twist may assign an IP address dynamically, the storage configuration of the client system 10 is changed. Then, in step 830, answerback of "Yes" or "No" is not concerned for whether being a carrier beam, but processing progresses to step 850. In addition, such a check step is applied to any system construction.

[0068] In the step of the arbitration of this processing, you may ask whether the client software 90 has the volition of an automatic configuration to a user. This request is shown by the box 850 with the gestalt of implementation of a graphic display. In "Yes", processing continues from step 860 where the existing setting out of IP address setting out, DNS address selection, etc. is saved. As for such setting out, it is desirable to be saved at both, such as long-term storage, such as temporary storage, such as volatile memory (RAM) 40, and nonvolatile memory 50.

[0069] If an IP address is changed into a dynamic thing at step 840, an IP address is reset and can set up at step 870 (setting out of a request of not only an IP address but others). In addition, special setting out (namely, special value over specific communication link setting out) applied to ECN connection using the system of this invention is set up in step 870. This is performed from the external source 875 through an access port 160 by receiving the predetermined value memorized with the client software 90, and the predetermined value saved in memory 50 and 40.

[0070] The model processing step for receiving an IP address is explained below in relation to steps 641, 643, and 645 from the external source etc.

[0071] Moreover, at step 880, the disable of the specific setting out of DNS address selection etc. is carried out, for example (set up impossible [setting out]). The gestalt of this operation offers the Internet access system of dedication using domain name service of dedication.

[0072] According to a demand, an option for a user to reboot a system is offered so that it may illustrate to step 890. Many of latest terminals require reboot and it performs special setting out. If a user chooses "Yes" and reboot is performed, the preparation which starts connection with ECN310 through an access port 160 will be completed. Processing can be continued as drawing 31 and the continuation alphabetic character "X" of 25 show. If "No" is chosen, setting out will be returned (restored) and the client software 90 will be ended.

[0073] The client system 10 is constituted by desired setting out, such as an IP address, following reboot. When the client system 10 reboots, special setting out offered at steps 870 and 880 is used in order to initialize the client system 10 (initialization), as shown in step 900. As shown in step 910 after initialization 900, setting out of an original copy is returned by returning from the long-term storage of memory (nonvolatile memory 50 and drive 80 are minded and they are removable media etc.). This step may also contain the step which saves special setting out to nonvolatile memory 50 or the removable media 80 (save), in order to use it in relation to step 633 later. Such setting out is used when the client system 10 reboots next time. At this step, a system returns IP address setting out and/or DNS address selection which were saved at step 860 (save), for example. Thus, the client system 10 is returned to the configuration (saved at step 860) of an original copy after a communication link period (communication link session) with ECN310, and reboot. As shown in step 920, as for a client system, the preparation for connection with ECN310 is completed, and the client system 10 can communicate now to the Internet etc. through ECN310. The period (session) makes it possible to start with the various thing of the processing step described below. For example, it is also possible to start from bill creation steps, such as steps 648 and 649. however, the case where presetting is carried out etc. -- a bill creation step -- ***** -- there are things. In such a case, it starts from step 665 of explanation to the following.

[0074] With the gestalt of above-mentioned operation, before the client software 90 starts the client system 10 in the client system 10, it is connected to the port 160 connected with a server 110 through the wiring 65 between a communication adapter 60 and a port 160. In addition, gestalten of other connection, such as wireless connection, are also applicable. With the gestalt of other operations, the client software 90 begins to start in front rather than the client system 10 is wired through wiring 65 etc. in a port 160.

[0075] Drawing 13 shows the model connection step as a handshake (handshake step) in the gestalt of each operation. The client software 10 requests required information to a server 110 through an above-mentioned access port 160 and communication system (demand). For example, it is first transmitted to the network communication adapter 60 through a bus 30 from CPU20, and a request is transmitted to an access port 160 through wiring linked to the network communication adapter 60. And a request is transmitted to a server through either a cable 165 or the radio link 167 through the interface 150 in a server. Especially the requested information includes dynamic assignment of the IP address corresponding to the Local Area Network where a part is constituted as an access port 160, as the example which already has relation with step 870 of drawing 31 was shown. In addition, an IP address is the address of the proper for distinguishing a client system in a network context.

[0076] At step 643, it is reception and the following step desirably shown in a box 645, and assignment of a server to an IP address is saved in memory (memory of throats, such as removable media through RAM memory 40, nonvolatile memory 50, and/or drive 80). As shown in step 647 of drawing 13, the assigned IP address is reported to the server access control software which operates by the server 110 by client software. This system has a server 110 effective in distinguishing the specific client system 10, when two or more client systems 10 access a server 110 at a coincidence term, or when two or more access ports 160 are usable.

[0077] Drawing 14 shows other connection steps. When the acknowledge signal from a server is received as shown in step 643 after the authentication (check) request was transmitted from the client system 10 shown in step 641, the client software 90 passes through the distinction loop formation which performs periodical distinction. There, any authentication requests and acknowledge signals are also used and it gets. In addition, a check request is desirably for a server to assign an IP address to a client system, and an acknowledge signal is an IP address. Moreover, when an acknowledge signal is not received, as shown in step 641, other requests are transmitted to a server 110. In addition, the client software 90 may transmit other requests after a temporary standby time, as shown in step 642. It is predetermined [the] or the calculated standby time is selectable by the user. For example, it is possible to choose the period of a microsecond, a ms, 1 second, 5 seconds, and others. The client software 90 can continue transmitting a request to a server 110 by using a processing loop formation in this way. Moreover, transmitting a request, when the client system 10 is not connected to the port 160 can be continued until it is received. Although the client system 10 can try transmission of a request by transmitting a request at step 641, however when there is another cause of the interruption at the time of being a communication link or cutoff when the client system 10 is not connected or (in the cases of the system in which the mistake is wiring-made and which is used, interference, a connection impossible-from port 160 server, etc.), a request is not transmitted to a server. In addition, if connection is completed, since a server 110 receives a request and acknowledge signals, such as an IP address, can be transmitted, processing of step 643 can be continued.

[0078] Drawing 15 illustrates other connection steps. At steps 638 and 639 of this drawing, the client software 90 distinguishes periodically whether the well cam signal 749 from a server 110 was received through a distinction loop formation. When the well cam signal 749 (it illustrates to drawing 29) is not received yet at this time, the client software 90 continues confirming whether it was received or not. In addition, since the standby time which is predetermined or was calculated is chosen by the user as shown in the standby step 639, the client software 90 checks a well cam signal after the fixed waiting period. For example, it is possible to choose over the period of a ms, 1 second, 5 seconds, and others for 1/1 million second. The client software 90 can wait for connection with a server 110 by using a processing loop formation in this way.

[0079] Moreover, a server transmits the active well cam signal 749 to which an usable port (hot port) is made to carry out the port of **** with the well cam signal with which each client system 10 to connect is provided to each port 160. Thus, if the client system 10 is connected and the software 90 starts, the well cam signal 749 can be received and handshaking can be begun. In addition, the signal of which gestalt is sufficient as the well cam signal 749. By this system, the well cam signal 749 can start the connection of communication system made through a server 110. Moreover, the server system 110 is not concerned with whether the client system is connected, but transmits the well cam

signal 749 to all the ports 160. For example, before [, such as during a handshake period or the period between ECN310 and the client system 10,] being received, to behind, the well cam signal 749 continues in a port 160 by the server system 110, and is transmitted. Then, a port 160 can be in the condition of being usable (hot). On the other hand, a server 110 can interrupt transmission of the well cam signal 749 to the port 160 already connected to the client system 10.

[0080] When the client system 10 is not connected to the port 160, it can continue checking until it is received. And if a well cam signal is received, the KURAINTO system software 90 can progress to step 641, can transmit the request of an IP address to a server 110, and can continue handshaking. With the gestalt of other operations, advice of visual or acoustic-sense-is transmitted to a user about connection with a server. For example, the dial tone [**** / that an icon is displayed on a screen] "BI" occurs in a loudspeaker, or connection software is loaded. Authentication is transmitted in every phase of a handshake. As the arrow head to the outlet of a box 640 shows, as for it, being transmitted after reception of a well cam signal is desirable.

[0081] Drawing 13 , drawing 14 , and drawing 15 are made for the illustration object, and should relate also to handshaking between a client system and ECN310. Steps 638 and 639,641,642,643 in drawing 13 , drawing 14 , and drawing 15 may be connected, respectively.

[0082] If processing of the client software 90 shown in drawing 29 is started, a user will connect a cable 65 to a port 160 as a gestalt of this operation. A server continues transmitting the well cam signal 749 to a port 160 continuously or periodically, as shown in a sign 745. On the other hand, as shown in a box 910, the client software 90 is turned on in a client system. clicking on an icon **** -- a program menu -- or the client software 90 is turned on using functions of a Windows operating system, such as "Run." On the other hand, the on-command of the client software 90 is contained in the start-up phase of the client system 10. It also enables client software 90 to start always, when a client system starts. In the gestalt of this operation, client software operates in the background (namely, memory region) until it receives the well cam signal 749. In addition, with the gestalt of this operation, the client software 90 can start automatically interfaces, such as a browser which provides a user with an image environment, and special Internet access software. Then, as shown in a box 920, a client system waits for reception of the well cam signal relevant to steps 638 and 639. On the other hand, a client system transmits a request signal to a server 110 periodically, as shown in steps 641, 642, and 643 of drawing 14 . Then, as shown in a box 930, a user connects a cable 65 to a port 160, and connects wiring between the client system 10 (or the adapter 60 there) and a port 160. Gestalten of other connection, such as wireless connection, are started in this step. The well cam signal 749 can be transmitted to the client system 10 from a port 160, as shown in a box 940. This is in agreement with the "Yes" line between steps 638 and 641 of drawing 15 . And as shown in a sign 641, processing for performing initialization or handshaking is continued.

[0083] The access port 160 in the gestalt of this operation is an usable access port (hot access port), and can begin a communication link by the client system at any time. The illustration of drawing 30 is an usable access port applied to this invention. As shown in the drawing, the active well cam signal 749 is sent to an access port through the communication link from a server to an access port 160. In addition, although the link gestalt of wireless can be used, the wiring link 165 is illustrated. Since the access port has the well cam signal 749 which is not concerned with whether the client system is connected but is transmitted in the direction of an access port, it is usable and is the active emitter of

the well cam signal 749 as a matter of fact. Drawing 30 shows the client system 10 connected to the usable access port 160 through a cable 65. Once a cable 65 is connected, a well cam signal will reach a client system through an access port and a cable 65. The wireless system which does not have a cable 65 is also used again.

[0084] Although access which is not measured or calculated with the gestalt of this operation can also be performed, the user of the client system 10 receives the claim of a tariff to access to ECN310. The example of the claim creation approach is with those with two, a time amount count claim, and a criteria claim of operation. In addition, when asking for bill creation, the client software 90 begins activation of the setup procedure by which credit card information etc. was saved in memory. With the gestalt of this operation, a user answers validity or credit card information on the content of a claim etc. in a setup phase. On the other hand, a client system is equipped with the credit card decoder (not shown) which reads the information on a credit card in the magnetic tape with which a user's credit card was encoded. The smart card which has the encoded computer chip on the other side, and the smart card reading comprehension machine (not shown) installed in the client system 10 can be used together.

[0085] At the next step of the gestalt of the operation about bill creation, client software checks whether bill creation information has been beforehand saved in memory. If the user saves bill creation information beforehand in the setup phase, reading appearance of this information can be carried out from memory at any time. On the other hand, software 90 checks the saved bill creation information, and in step 648, if found, "Yes" will be transmitted. Reversely, when not found reversely, a series of request processings about the bill information requested by the user are performed continuously (steps 649-653). With the gestalt of other operations, since it is unnecessary, bill creation is continued to step 665 as it is.

[0086] In step 648 of the gestalt of the illustrated operation, when answerback of "No" arrives, as shown in the box 649 of flow drawing, a server 110 can request a bill creation option. Moreover, it may set up like or the client software 90 may be equipped with the bill option "extrudes" a bill option and which is beforehand saved for the client software 90 so that the server software 130 may be transmitted automatically, or it may be made to have the bill option with which it is compensated using the information from a server 110. In the gestalt of suitable operation, a server 110 transmits the form of the bill software which provides the client software 90 with information through the connection explained on these descriptions. For example, a credit card, a prepaid access card, a smart card, the approach for which the bill of a hotel room is asked directly are included in such a bill option. If a bill option is received at step 651, in step 653, a bill optional menu or a series of menus will be expressed as the gestalt of the operation to illustrate. With the gestalt of this operation, the block of credit card information is displayed and the user of the client system 10 writes down a need matter in it. If the entry is completed, it will return to step 648 and down stream processing will continue, for example. When sufficient bill information is received, saved and inputted, as for bill information, it is desirable to be transmitted to the bill software which starts by the server 110. Although such bill software is another software module, it is [the server software 130] desirable that it is a part of server software 130. This step is shown in a box 659. In order to perform the newest access and the newest bill report, as for this bill information, being saved at a server 110 is desirable. [0087] If bill information is filled in and transmitted at step 659, it will this-approve or the server

software 130 or a bill creation software component will deny bill information. As shown in step 661, the client software 90 waits for distinction of license or denial. This license processing is accomplished by transmitting information in the bill processing center through an ECN communication link. When bill creation is denied, as shown in a box 667, a message is displayed on a display 75 and a user is provided with options, such as another Invoicing method, further bill creation information, and termination of a communication link period, (namely, when refused). A user's decision matter is processed in a box 668. At this time, a user fills in another Invoicing method and other claim information, and if it clarifies that there is continuation volition, processing will return to step 649 (a bill option is requested) or step 653 (display of a bill menu). If it clarifies as "No" that there is no volition to which a user continues processing reversely, a communication link period will be ended.

[0088] As shown in step 661, license and a denial signal are transmitted to the client software 90 by the server software 130. In addition, if bill creation is approved, the server software 130 will give access to ECN310 to the client system 10 by enabling a trace of the IP address assigned to each client system 10. With the gestalt of operation shown in drawing 7, the server software 130 enables access to the Internet 310 (a kind of ECN) by the client software 90 receiving distinction of yes or no by pursuing a user's IP address from a server 110 to ECN through an interface 140 and a router 145.

[0089] The box drawing 665 of drawing 9 shows an ECN access period. In the gestalt of this operation, since a user will access the Internet, the browser of all gestalten or the Internet access software of other gestalten is applied. For example, a user can connect with ECN of other gestalten, such as an on-line service. On the other hand, when a user accesses the dialup server which offers access to a dialup server or a Wide Area Network, a database, and electronic bulletin board system access, the option which makes starting of a telephone communication period possible is given.

[0090] In the period which is operating by the desktops 75, such as Windows 95, a display while having founded the display while the client software 90 loads, and the link to ECN310 is shown in drawing 16 as a model display screen display. TAKUSUBA 510 of Windows and a "start" carbon button are located down Screen 75. The active icon of the client software 90 is located in the lower left of Screen 75. "IDT" in the client software 90 may appoint other identifiers and notations. The activity box 545 is displayed on Screen 75. Since it means making connection, such an activity box 545 is expressed as the gestalt of this operation. The activity box 545 notifies being constituted in order that the client system 10 ("terminal") may perform access to ECN310 ("high-speed Internet access").

[0091] The screen shown in drawing 17 is a thing showing the model display screen of a bill option, and is the menu which displayed processing of step 653 of drawing 13. Various bill options are displayed and a user chooses a "claim gestalt" based on it. Various menu gestalten and a selection screen can be used and there may be an option how much. With this operation gestalt, a user can choose one from things, such as a credit card, a smart card, a hotel room claim, or a prepaid card. In addition, an option can be increased also to others, such as a debit card claim, a prepaid access card, Internet banking, and an electronic check. for example, the time of filling in a credit card number and a hotel room number -- reaching -- the dialogic-operation box otherwise arranged is applicable. For example, the dialogic-operation box at the time of filling in the expiration date of a credit card, the identifier of a credit card, or a prepaid access card number etc. can be used. Since many bill screens can be displayed simultaneously, the one-eyed screen is used as the screen of claim gestalt selection,

for example with the gestalt of this operation. After being chosen, client software displays other screens (or there may be no next screen) according to claim gestalt selection. For example, if credit card payment is chosen, the next screen will display the form for filling in required data, such as a credit card number and an expiry date. On the other hand, the client software 90 may be equipped with the bill creation information saved beforehand for a credit card or prepaid credit data. With the gestalt of another operation, after selection of a bill gestalt, the client software 90 is loaded, if the data according to the claim gestalt saved are checked and found. However, when such data are not found, the client software 90 displays the screens for claim information entry (form etc.). Such bill-related enquiry, a menu, etc. are created by the server software 130, and are transmitted to the client system 10.

[0092] Drawing 18 is a thing illustrating the model display screen when ECN connection is completed, while the client software 90 is operating with operating systems, such as WINDOWS95, and it supports step 665 of drawing 13. It has the active icon 540 corresponding to the taskbar 510 of Windows, and the client software 90, and the minimized carbon button 550. In addition, it points out using a mouse, a touchpad, and the input devices 70, such as a touch screen, or it clicks and the minimized carbon button 550 is chosen. After choosing there, the selection screen of the client software 90 is displayed. The selection screen is equipped with various options, such as a setup configuration and connection termination. Under connection, For example, a homepage, an on-line service, an electronic mail, and the ECN display 560 of the FTP menu etc. are displayed on a screen.

[0093] With the client software 90 and the server software 130, work of various processing steps can begin during ECN connection. For example, the client software 90 sends the signal which checks continuation of ECN connection periodically to the server software 130. drawing -- ***** -- as long as -- the client software 90 transmits a control signal to the server software 130 every half a sum in order to display ECN connection. Drawing 19 illustrates the timing loop processing step started by the server software 130. As shown in drawing 19, the server software 130 is equipped with the timer 721 which offers a clock signal. Since the precedence commuter's ticket acknowledge signal 724 from the client software 90 of the client system 10 is received in a timing loop after the clock signal 722 is received (here) It is judged whether the latency time for 5 minutes passed. And after the latency time passes, the server software 130 checks whether the fixed acknowledge signal 724 has been received. Then, when not received, the server software 130 ends ECN connection, as the processing step 726 shows. By ending ECN connection, the server software 130 releases the IP address assigned to the specific client system 10. In such examples, the client system software 90 cannot maintain connection with a server 130. However, if the "No" signal occurs at step 725, as shown in the processing step 727, server software will transmit a cutoff signal to the access port 160 to which the client system 10 was connected. In addition, if the client system 10 is still connected to the access port 160, the client software 90 will receive a cutoff signal, and will perform cutoff processing. The physical connection between an access port 160 and the client system 10 may be intercepted before passing through cutoff processing of client software (it indicates for details later). For example, a user may intercept the link of the cable between an access port 160 and the client system 10 etc. without starting cutoff processing. Or the connection between the client system 10 and a server 110 may be blocked before cutoff processing by the client software 90.

[0094] The server software 130 sends the signal which checks continuation of ECN connection

periodically to the client software 90. The server software 130 sends the control signal which displays ECN connection on the client software 90 every half a sum. Moreover, server software transmits a polling signal to each client system 10 for every predetermined time amount periodically. This fixed polling signal requests the acknowledge signal answerback from each client system 10. By receiving the polling signal from server software, the client software 90 of the client system 10 can return an acknowledge signal. If an acknowledge signal is not returned, the server software 130 will end ECN connection of the specific client system 10, and will transmit a cutoff code to the access port 160 corresponding to the specific client system 10. However, when the client system 10 is connected to the access port, a cutoff code will be received and the client system software 90 will pass through cutoff processing.

[0095] The time of there being no reception of a fixed check, when "No" is transmitted at step 725, or when it is intercepted without connection between a server 110 and the client system 10 passing through cutoff processing (it describes below as drawing 20 shows) of client software and connection goes wrong, server software begins count of a bill and transmits bill data to a suitable claim firm or a processing station through ECN310.

[0096] The cutoff processing which the client software 90 should perform is shown in drawing 20 . Under ECN connection (box 665 of drawing 13) etc. can be set working [client software], or the user of the client software 90 can start cutoff processing at what kind of time of others. This is performed by pointing out a cutoff carbon button ("communication link termination", or "off" or "a stop" being indicated) with the input devices 70, such as positioning or a click system. Such a cutoff request is shown by the box 731 of drawing 20 . And at step 732, the client software 90 displays the cutoff option screen 565, and a user checks cutoff. The model cutoff option screen 565 is shown in drawing 21 . It is possible to choose on this model cutoff option screen 565, namely, it is possible to make return connection in actuation of client software, such as for a user to approve the cutoff selection 567, or to deny the cutoff selection 569 and to return to ECN connection. In this example of drawing, a user intercepts by choosing 567 using click equipment, chooses 569, and makes connection. If an option 567 is chosen in actuation of the client software 90 (i.e., a check of cutoff returns "Yes" at step 733 of drawing 20 .) When approval of cutoff is not received by selection of an option 569, "No" is similarly returned at step 733.

[0097] If "Yes" is returned in step 733, as shown in step 734, client software will transmit a cutoff signal to the server software 130, and will request termination of an ECN communication link. On the other hand, if "No" is returned, client software will return to other processings of an audit trail, an ECN communication link, etc. A cutoff signal is transmitted to the bill processing part (it describes later) of the server software 130. As the processing step 735 to which reception of claim data is performed shows, the server software 130 reports claim data to the client software 90. Client software expresses claim data as the following step 737 according to the information received from the server software 130.

[0098] The model bill display screen 570 is shown and all data are expressed as this screen so that drawing 22 may be displayed in relation to step 737. Like the example of this drawing, a connect time 572 and the total amount of money 574 are displayed. The display of other data is also possible, for example, access, a commission, a hotel room tariff, an accompanying tariff, etc. to service are displayed. Moreover, the bill display screen 570 is piled up with other display screens, or is replaced

and used, for example, the "Good-bye" screen and "log off" screen etc. is displayed. Other messages and alphabetic characters which are offered, such as various services, are expressed as a bill screen, a front screen or the front screen to continue, etc. Such other screens and messages are displayed in relation to the termination step 739 of drawing 21.

[0099] Actuation of the client software 90 is ended at the termination step 739. A processing step does work for ending client software 90 before the termination step 739. In the gestalt of suitable operation, setting-out data are saved at nonvolatile memory 50. For example, saved network initial setting in step 631 is returned. In addition, a terminal is rebooted if needed. Actuation of the client software 90 is ended by this post process. By performing the termination step 739, the active icon 540 and the minimized icon 550 are not displayed on a taskbar 410 any longer.

[0100] The server software 130 is equipped with many functions, and after they communicate through many client SHIFUTEMU 10 and access ports 160, control a bill creation function, maintain the database for clients and supervise an access port 160, they transmit a message to ECN310 and communicate with a distant claim system and a distant network management system 410. Although some functions of the server software 130 were explained, the function is outlined further. The server software 130 has the function to perform the communication link with the client system 10 and the client system software 90, and starts the ECN communication link between each client system 10 and ECN310. The server software 130 makes it possible to communicate with two or more client systems 10 at the same time it starts the client software 90. On the other hand, the single client system 10 is that either which communicates with the server software 130, or does not communicate. Moreover, server software is equipped with many functions to process actuation of the servers 110, such as initial setting and a port test.

[0101] The server software 130 is equipped with two or more modules and objects to connect in the gestalt of this operation. The graphic form description shown in drawing 23 is formed by a central processor 111, the bill creation module 112, the server link module 114, access-control MOJURU 116, and the system-failure module 117. This graphic form shows a pattern that these modules connect mutually and it operates. With the gestalt of other operations, these [all] crawl again and the module of shoes operates independently from other modules.

[0102] (Drawing 13) As shown in step 641, when the client software 90 requests dynamic IP address acquisition, the server software 130 (or access-control module 116) receives the request, and performs suitable answerback, it is step 643 behind and client software receives the answerback. Similarly, when the client software 90 requests a claim optional list at step 649, server software transmits the claim optional list which client software receives at step 651 behind. The trend of the server software 130 about this claim option is shown in drawing 24 and drawing 25. As shown in a box 751, the server software 130 receives the request from the client software 90. In step 755, when there is no reception of a request, as the arrow head of "No" shows, it waits as it is. On the other hand, reception of a request transmits a claim option to a client system according to "Yes" shown at step 759. And a server waits for the receipt check of bill creation information at step 763.

[0103] According to the transmitting loop formation shown with the signs 745, 746, and 747 of drawing 25, the server software 130 transmits the well cam signal 749 to a port 160. If the well cam signal 749 is transmitted, as shown in the check step of a sign 746, a system will distinguish the existence of reception of a receipt check. In the gestalt of the illustrated operation, the distinction step

746 distinguishes whether the request of an IP address was received, and performs distinction of other acknowledge signals similarly. If an acknowledge signal is not distinguished in step 746, a well cam signal will be returned and transmitted to step 745. In step 747, when it is resembled and it follows, when there is the latency time, or there is nothing, transmission of a well cam signal is performed as it is. In addition, it is predetermined or the calculated latency time is chosen. The server software 130 is not concerned with the existence of connection, but transmits the well cam signal 749 to all the assigned ports 160. If connection is made, the well cam signal 749 will be transmitted to the client system 10 through a port 160 as mentioned above. Moreover, although the well cam signal 749 can also include what kind of information, it connects with a server and its short thing which show things only r ***** is desirable. In addition, the signal is transmitted in an analog or digital one. In a digital case, the well cam signal 749 contains 1 bit, two or more bits, or a cutting tool.

[0104] If it distinguishes that the acknowledge signal was received at step 746, a server system will advance handshaking. In the gestalt of suitable operation, as shown in a box 748, server software transmits an IP address to the client system 10.

[0105] In the gestalt of the operation about the claim according to the access time, when the user of the client software 90 transmits claim information to server software at step 659, either server software or the bill creation module 112 starts claim license procedure. The server software's 130 receipt of this bill information carries out actuation shown by "Yes" of step 763. As shown in drawing 24 and drawing 25, with the gestalt of this operation, the server software 130 approves access to temporary ECN, even when bill license is not given, as step 767 shows, and that temporary license signal is transmitted to the client software 768. Effectiveness of this temporary access can be accessed by slight delay, if the time amount which cannot be accessed until bill license gets down eventually is taken into consideration. Moreover, the client software 90 displays the message which notifies that the user was permitted temporary access with the indicating equipment 75, while processing of bill license is continued. Temporary license and the last license are transmitted to the client software 90, as shown in step 661.

[0106] As shown in step 771, the server software 130 transmits bill creation information to a bill license server through ECN310 between bill license processings. In addition, when you need license of a credit card, a bill license server performs a duty of a credit secretariat or a credit card service server. On the other hand, a bill license request is transmitted to every bill license server through ECN310. For example, when the prepaid access card is used, a license request is transmitted to the issuance place of a prepaid access card.

[0107] A bill license server can approve processing, can carry out license with a credit, or can be denied. For example, when all the amounts of a prepaid access credit are consumed, processing is refused, but it will be approved if the credit card is effective. Steps 775 and 777 show actuation of receipt of license/objection. When approved at step 775, as shown in a box 776, a license signal is transmitted to the client software 90, and the trend of the receipt is shown in step 661. And valid-user information is added to the activity database maintained by the server 110.

[0108] Drawing 27 illustrates an activity database. Additional information and modification information are saved in this activity database. Data are shown as "XXX", "YYY", and "NNN" by this database for the illustration object. An activity database records the various information which shows the trend of a server. The various data in which a server, actuation of the access port 160 linked, and

the condition of an access port 160 are shown especially are recorded. For example, ON/OFF state of an access port are recordable. The access port of an ON state records suitable User Information, such as ID, and claim information, login time. For example, the IP address of the client system imposed on the client system 10 as the temporary address; It is saved in the client system 60. client network card MAC Address; which is related hardware base certification -- server network card ID; which is a server interface card -- in order to make it in agreement at it of an external database, and a high speed The user name of the access port 160 used; as "N" which shows the ordinal number of the "1", "2", and the access port 160 of drawing 27 shows The port ID which is each access port number of each access port 160; Since it is connected with the chamber where the access port 160 was specified, on the occasion of an activity in a building, are convenient. Are used with the gestalt of operation of a hotel, a steam ship, a housing building, and an office building. Room number; A credit card, and a smart card and a prepaid card, The approach of paying chosen as claim options, such as addition of a debit card, an activity account, and a hotel room claim; The credit card number according to a claim option, The number of the prepaid access card published by the expiry date; service provider of the credit card of the credit card holder name; claim option according to; claim options, such as an access card number and a debit card number, or a debit card; ON, OFF, or unusable which port status; -- it is shown whether access to the unsuccessful communicative count; bill server or the communicative unsuccessful network administration server 410 from the start time; client side which would be in the current port status for judging the sum total time amount of bill creation is possible -- [server] Bill server communication link condition; all data, such as bill server acknowledgement which maintains whether the selected license or advice of an objection of a bill option was transmitted, are further recorded on a database from a bill server system. In addition, other data can be recorded on a database, and the item of a database is changed while the condition of an access port 160 changes.

[0109] When reception of license is not performed, continuation of processing is performed from step 777. Moreover, reception of advice of an objection transmits an objection signal to the client software 90, as shown in step 779. Steps 661 and 667 of drawing 13 show receipt of the objection signal by the client software 90. In step 777, when the volition of an objection is not received, as the arrow head of "No" shows, it waits for advice of license or an objection.

[0110] Server software supervises the connection situation of a period that the client system 10 is communicating with the server 110. Or it is supervised with the server link monitor module 114. In addition, connection is interrupted for any reasons of cutoff of the unsuccessful and accidental cable of a client system, active jamming, etc. Moreover, if the intercepted connection is discovered, the server software 130 or the bill creation module 112 will transmit the final amount of money at that time to the bill server as a selected payment server.

[0111] In addition, if the server software 130 has a "patrol" function and the failure of a server system is found, it will reboot a system automatically. The item 117 of drawing 23 shows a system-failure module.

[0112] The server system 110 communicates with the network administration server 410 which starts network administration software. A network management system performs remote place management of two or more server systems 110. In the gestalt of suitable operation shown in drawing 26, the server system 110 communicates with two or more of the server systems 110 through ECN310 (or private network). One or more communication link stations 420 perform the

communication link with the network administration server 410. In addition, the communication link station 420 is already indicated by this description. Moreover, a network administration server performs the communication link with the bill processing servers 430, such as a credit card processing firm. In addition, although a network administration server makes connection of dedication of the processing server 430 and proper, the communication link with a processing server is performed through ECN(s), such as the Internet. The network administration server 410 draws up performance documentation 440, and sends e-mail to a customer again. The list of the claim amount of money or activity statistics is indicated by such report.

[0113] In addition, the network administration server 410 operates the network administration software 450, and performs bill creation, remote network administration, and processing of an activity statistical report. In addition, as for the network administration software 450, it is desirable that a server 110 and the communication link station 420 are supervised, and calculation of an activity ratio, the monitor of an error situation, and the reboot demand from failure detection remoteness can be performed. With the gestalt of this operation, the network administration software 450 offers advertising information to a server 110 and the communication link station 420, and updates that advertising information. Moreover, two or more servers 110 are used, and each server is the object which performs the communication link with one network administration server 410 (or two or more network administration servers 410), and is updated according to the approach of description.

[0114] In the gestalt of this operation, as shown in drawing 28, the client software 90 is built into the operating system of a client system. The operating system 810 possesses two or more programs and modules which were constituted so that it might adjust with actuation of client system 10 component. As shown in the example of a graphic display, an operating system 810 is formed from various components, such as a driver 815, the operating instruction set 820, and the client software 90. client software -- UNIX, MAC OS, and WINDOWS 95 -- and -- It is unified by operating systems, such as WINDOWS NT. With the gestalt of this operation, an operating system offers the user interface or desktop screen of the graphic form which can choose an icon and other selection carbon buttons easily using the input devices 70, such as a mouse, and a touchpad or a touch screen.

[0115] Thus, the system and approach about access and its actuation to a communication network are offered. This invention is not limited only to the gestalt of the suitable operation indicated by this description. The explanation shown here is not a thing aiming at a limit, but is explanation as instantiation.

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- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.*** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] It is an approach for performing the communication link between a client system, a server system, and an electrical-communication network. A client system Client software for communicating between a client system and an electrical-communication network is performed. A server system Server software for communicating between two or more client systems and an electrical-communication network is performed. Moreover, the transmitting step which performs two or more access ports and electrical communication, and transmits a well cam signal to the first access port from a server, The distinction step which distinguishes by the server whether the acknowledge signal was received by the first access port, If it distinguishes that the acknowledge signal was received by the first access port in the distinction step The correspondence procedure characterized by having the handshake step which performs handshake processing by the server system, and the repetitive step which will repeat a transmitting step and a distinction step if it distinguishes that the acknowledge signal is not received in a distinction step.

[Claim 2] Said transmitting step is a correspondence procedure according to claim 1 characterized by having the step which transmits a well cam signal to each access port which is not connected to the client system further.

[Claim 3] Said repetitive step is a correspondence procedure according to claim 1 characterized by having the step which carries out predetermined period standby before repeating a transmitting step and a distinction step.

[Claim 4] Said distinction step is a correspondence procedure according to claim 1 characterized by having the step which distinguishes whether the server system received the request of an IP address.

[Claim 5] Said handshake step is a correspondence procedure according to claim 4 characterized by having the step which transmits an IP address to a client system through the first access port.

[Claim 6] Said repetitive step is a correspondence procedure according to claim 1 characterized by having the step which carries out predetermined period standby before repeating a transmitting step.

[Claim 7] It is an approach for performing the communication link between a client system, and a server system and an electrical-communication network. A server system Server software for performing the communication link between two or more client systems and an electrical-communication network is performed. Moreover, the initiation step which performs two or more access ports and electrical communication containing the first access port, and starts client software by the client system, The distinction step which distinguishes by client software whether the well cam

signal was received, The handshake step which will perform handshake processing by the client system if it distinguishes at a distinction step that the well cam signal was received, The correspondence procedure characterized by having the repetitive step which repeats a distinction step until a well cam signal is received if it distinguishes at a distinction step that the well cam signal is not received.

[Claim 8] The correspondence procedure according to claim 1 to 7 characterized by having further the step which connects a cable to the first access port from a user system in order to establish electrical connection between the access port which makes it possible to transmit a signal between a user system and a server system, and a user system.

[Claim 9] The correspondence procedure according to claim 7 characterized by having the step which transmits a well cam signal to the first access port from a server system.

[Claim 10] Handshake processing is a correspondence procedure given in claim 1 characterized by having the step which transmits it to a server after outputting a connection confirm to a user thru/or any 1 term of 7.

[Claim 11] The connection confirm transmitted to a server is a correspondence procedure according to claim 10 characterized by including the step which transmits a request to a server.

[Claim 12] A correspondence procedure given in claim 1 characterized by having further the step which transmits the connection confirm outputted to a user thru/or any 1 term of 7.

[Claim 13] A connection confirm is a correspondence procedure according to claim 12 characterized by being a visual signal.

[Claim 14] The correspondence procedure according to claim 7 characterized by including the step which performs client software in the background until a distinction step distinguishes that the well cam signal was received by Ushiro of an initiation step.

[Claim 15] The correspondence procedure according to claim 7 characterized by having the step which performs client software in the background after an initiation step, and the step which performs an electrical-communication network communication program after distinguishing at a distinction step that the well cam signal was received.

[Claim 16] Said repetitive step is a correspondence procedure according to claim 7 characterized by providing the step which stands by between predetermined before repeating a distinction step.

[Claim 17] It is an approach for performing the communication link between a client system, a server system, and an electrical-communication network. A client system Client software is performed in order to perform the communication link between a client system and an electrical-communication network. A server system Server software is performed in order to perform the communication link between two or more client systems and an electrical-communication network. Moreover, the step which performs two or more access ports and electrical communication, and transmits a well cam signal to the first access port from a server, The distinction step which distinguishes by the server whether the acknowledge signal was received by the first access port, The step which distinguishes by the client system whether the well cam signal was received, The step which transmits a connection-confirm signal to a server system from a client system, When it distinguishes by the server that the acknowledge signal is not received from the handshake step which performs handshake processing in a server system and a client system, by the server The correspondence procedure characterized by having the step which repeats transmission of a well cam signal, and the

step which will repeat a distinction step by the client until a well cam signal is received if it distinguishes by the client that the well cam signal is not received.

[Claim 18] Said handshake step is a correspondence procedure according to claim 1, 7, or 17 characterized by having the step which offers a bill optional list including the one or more tariff payment approaches, the step which specifies an Invoicing method and transmits it to a server system from a client system, and the step which transmits the signal which tells the volition of license/denial of a bill to a client system from a server system.

[Claim 19] The correspondence procedure according to claim 1, 7, or 17 characterized by having the step which performs two-way communication between an electrical-communication network and a client system through a server system following handshake processing.

[Claim 20] The correspondence procedure according to claim 1, 7, or 17 characterized by providing further the step which continues transmitting a well cam signal to the first access port from a server if the step which performs handshake processing begins.

[Claim 21] It is the approach of performing the communication link between a client system, a server system, and an electrical-communication network. A client system Central processing unit (CPU) Volatile memory connected with CPU, It has a communication interface and client software for performing the communication link between a client system and an electrical-communication network is performed. A server system Server software is performed in order to perform the communication link between two or more client systems and an electrical-communication network. Transmit a well cam signal to an access port from a server, and a client system is connected to an access port. The correspondence procedure characterized by what a well cam signal is received in a client system, and the communication link session between a client system and an electrical-communication network is established for.

[Claim 22] They are a client system, a server system, and the communication system that performs the communication link between electrical-communication networks. A client system Client software for performing the communication link between the client system and electrical-communication network is performed. A server system Server software for performing the communication link between two or more cline TOSHISUTEMU and an electrical-communication network is performed. Moreover, a means to perform electrical communication with two or more access ports, and to transmit a well cam signal to the first access port from a server, A distinction means by which an acknowledge signal distinguishes by the server whether it is the no received by the first access port, If a distinction means reports the purport from which the acknowledge signal was received by the 1st access port Communication system characterized by having a means to perform handshake processing in a server system, and a means to re-operate a transmitting means and a distinction means if a distinction means checks that the acknowledge signal is not received.

[Claim 23] A distinction means is communication system according to claim 22 characterized by having a means to distinguish whether the server system received the request of an IP address.

[Claim 24] They are a client system, a server system, and the communication system that offers the communication link between electrical-communication networks. A server system In order to perform server software for performing the communication link between two or more client systems and an electrical-communication network, and to perform two or more access ports and electrical communication and to communicate with a server system A means to start client software in a client

system, If a distinction means distinguishes a distinction means to distinguish whether the well cam signal was received, and that the well cam signal was received Communication system characterized by having a means by which a client system performs handshake processing, and a means to re-operate this distinction means if a distinction means distinguishes that the well cam signal is not received.

[Claim 25] A distinction means is communication system according to claim 24 characterized by having a means to perform handshake processing which has a means to transmit the request of an IP address to a server system from a client system, through an access port.

[Claim 26] A data-logging medium includes a means to read a code in this data-logging medium. A means to have the code which is used by the server computer system which communicates among at least one or more client systems and in which machine reading is possible, and to transmit a well cam signal to the first access port from a server, A distinction means to distinguish in a server whether the acknowledge signal was received by the first access port, If a distinction means distinguishes that the acknowledge signal was received by the first access port The data-logging medium characterized by having a means by which a server system performs handshake processing, and a means to re-operate a transmitting means and a distinction means if a distinction means distinguishes that the acknowledge signal is not received.

[Claim 27] A data-logging medium has the mechane-readable code used by the client computer system equipped with a communication interface and a means to decode a code from this preservation medium. A means to start client software by the client system in order to perform the communication link with a server system, If a distinction means distinguishes the purport by which the well cam signal was received from a distinction means to distinguish whether the well cam signal was received The data-logging medium characterized by having a means to perform a handshake in a client system, and a means to re-operate a distinction means if a distinction means distinguishes that the well cam signal is not received.

[Claim 28] The server system which performs server software which is equipment for communicating on an electrical-communication network, is equipped with a processor, and controls actuation of a server system, At least one client system containing a central processing unit (CPU) and a communication interface, and in order to perform electrical communication Two or more access ports from which it is linked to the server system and each is further constituted by at least one client system possible [a link], A means by which a preparation and said server software transmit a well cam signal to the 1st access port from a server, Electrical-communication equipment characterized by what it has a distinction means to distinguish in a server whether the acknowledge signal was received by the 1st access port, and a means to repeat and start a means to transmit a well cam signal to said first access port until said acknowledge signal is received for.

[Claim 29] The correspondence procedure characterized by having the offer step which is the approach of offering access to an electrical-communication system through the server system connected to a client system through an usable access port, and provides an usable access port with an active well cam signal, and the step which links a client system to an usable access port, and provides a client system with this well cam signal automatically.

[Claim 30] The offer step which offers an active well cam signal is a correspondence procedure according to claim 29 characterized by including the step which repeats a well cam signal to an

usable access port, and is transmitted to it from a server system.

[Claim 31] The correspondence procedure according to claim 30 characterized by having further the interruption step whose client system link to a client system and interrupts offering a well cam signal from a server system for Ushiro who transmitted the acknowledge signal which checks reception of a well cam signal.

[Claim 32] The step which offers an active well cam signal is a correspondence procedure according to claim 29 characterized by having the transmitting step which transmits a well cam signal to an usable access port periodically from a server, and the receiving step which receives a well cam signal in a client system after the step linked to a client system.

[Claim 33] Links tetraethylpyrophosphate is a correspondence procedure according to claim 29 characterized by providing the step which connects a cable to an usable access port from a client system.

[Claim 34] The correspondence procedure according to claim 29 characterized by providing the execute step which performs client software by the client system before a link step, the receiving step which receives a well cam signal by the client system after a link step, and the transmitting step which transmits the indication signal which directs that the well cam signal was received to a server system from a client system.

[Claim 35] The access port which offers access to an electrical-communication system through a server by connection with a client system.

[Claim 36] The access port according to claim 35 characterized by having the reception link which receives a signal from a client system, and the emitter which outputs an active well cam signal.

[Claim 37] The usable access port according to claim 35 characterized by having a means to receive a well cam signal from a server system, a client system and a means to establish a communication link, and a means to transmit a well cam signal to a client system when a communication link is founded.

[Claim 38] It is the approach of performing the communication link between a client system and an electrical-communication network. A client system In order to perform the communication link between a client system and an electrical-communication network In order to have two or more communication link setting out, and to perform client software and to perform the communication link between a client system and an electrical-communication network The distinction step from which communication link setting out distinguishes whether it is appropriately set up by the client system, If a distinction step distinguishes that communication link setting out is not set up appropriately The save step which saves the 1st communication link setting out to memory at least in a client system, The correspondence procedure characterized by having the modification step which changes the 1st communication link setting out at least in a client system if communication link setting out distinguishes not being set up appropriately.

[Claim 39] The correspondence procedure according to claim 38 characterized by having further the reboot step which reboots a client system following a modification step if communication link setting out distinguishes not being set up appropriately.

[Claim 40] A modification step is a correspondence procedure according to claim 38 characterized by having the receiving step which receives the new value of the 1st communication link setting out from external data processing system.

[Claim 41] The correspondence procedure according to claim 38 characterized by having the request

step which requests the 1st communication link setting out at least at an external server system, and the receiving step which receives the new value of the 1st communication link setting out at least from an external server system in front of a modification step in front of a modification step.

[Claim 42] It is the correspondence procedure according to claim 41 which it has further the connection step which connects a client system to an access port before a distinction step, and a request step is further equipped with the step which requests the 1st communication link setting out at least through an access port at an external server system, and is characterized by what a receiving step is further equipped with the receiving step which receives the new value of the 1st communication link setting out at least from an external server system through an access port for.

[Claim 43] It is the correspondence procedure according to claim 41 which it has further the connection step which connects a client system to an access port after the step saved to memory, and a request step has the request step which requests the 1st communication link setting out to an external server system at least through an access port, and is characterized by what a receiving step has for the step which receives the new value of the 1st communication link setting out at least from an external server system through an access port.

[Claim 44] The connection step which connects a client system to an usable access port using a digital signal transfer means, The request step which requests the 1st communication link setting out to an external server system at least through an access port in front of a modification step, The receiving step which receives the new value of the 1st communication link setting out at least from an external server system through an access port before a modification step, The correspondence procedure according to claim 38 characterized by having further the reboot step which reboots a client system following a modification step if communication link setting out which connects a client system to an usable access port distinguishes not being set up appropriately.

[Claim 45] The correspondence procedure according to claim 38 characterized by providing further the ECN connection step which the 1st communication link setting out is applied to ECN connection, and makes ECN connection following a modification step.

[Claim 46] The correspondence procedure according to claim 45 characterized by providing further the ECN connection step which the 1st communication link setting out is applied to ECN connection, and makes ECN connection following a receiving step.

[Claim 47] It is the approach of performing the communication link between a client system and an electrical-communication network. A client system Client software for performing the communication link between a client system and an electrical-communication network is performed including two or more communication link setting out. The distinction step which distinguishes whether it is constituted so that a client system may receive the new value of the 1st communication link setting out, The preservation step which saves the 1st value of the 1st communication link setting out in memory at least when the client system was constituted so that the new value of the 1st communication link setting out might be received and it is distinguished, The correspondence procedure characterized by providing the setting-out step which sets up the 1st communication link setting out at least using the new value of the 1st communication link setting out.

[Claim 48] A preservation step is a correspondence procedure according to claim 38 or 47 characterized by including the preservation step which saves an IP address and the DNS address.

[Claim 49] The 1st communication link setting out is a correspondence procedure according to claim

38 or 47 characterized by being chosen from a group including an IP address and the DNS address.

[Claim 50] The correspondence procedure according to claim 38 or 47 characterized by providing the step constituted so that the new value of the 1st communication link setting out of a client system may be received following a distinction step.

[Claim 51] The correspondence procedure according to claim 38 or 47 characterized by providing the step which asks whether there is any volition of which the user of a client system changes the configuration of communication link setting out of a client system.

[Claim 52] The correspondence procedure according to claim 47 characterized by providing the receiving step which receives the new value of the 1st communication link setting out before a setting-out step.

[Claim 53] A client system is a correspondence procedure according to claim 47 characterized by what it has the 1st communication link setting out at least, and has further for the unusable step of a predetermined value carried out by the ability not using the predetermined value of the 1st communication link setting out at least before a distinction step following a setting-out step.

[Claim 54] The correspondence procedure according to claim 47 characterized by providing the reboot step which reboots a client system following a setting-out step.

[Claim 55] The correspondence procedure according to claim 54 characterized by having further the initialization step which initializes a client system by the 1st communication link setting out of a new value following a reboot step.

[Claim 56] The correspondence procedure according to claim 55 characterized by having further the return step which returns the 1st value of the 1st communication link setting out following an initialization step.

[Claim 57] A return step is a correspondence procedure according to claim 56 characterized by having further the preservation step which saves the new value of the 1st communication link setting out in memory.

[Claim 58] a setting-out step -- then, the reboot step which reboots a client system and a reboot step -- then, the initialization step which initializes a client system using the new value of the 1st communication link setting out and an initialization step -- then, the correspondence procedure according to claim 47 characterized by to have further the step which returns the 1st communication link setting out to the 1st value, and the preservation step which saves the new value of the 1st communication link setting out in memory.

[Claim 59] The correspondence procedure according to claim 47 characterized by having further the request step which requests the 1st communication link setting out at least at an external server system, and the receiving step which receives the new value of the 1st communication link setting out at least from an external server system in front of a setting-out step in front of a setting-out step.

[Claim 60] It is the correspondence procedure according to claim 59 which it has further the connection step which connects a client system to an access port before a distinction step, and a request step is further equipped with the request step which requests the 1st communication link setting out to an external server system at least through an access port, and is characterized by what a receiving step is further equipped with the receiving step which receives the new value of the 1st communication link setting out at least from an external server system through an access port for.

[Claim 61] It is the correspondence procedure according to claim 59 which it has further the

connection step which connects a client system to an access port following a preservation step, and a request step is further equipped with the request step which requests the 1st communication link setting out to an external server system at least through an access port, and is characterized by what a receiving step is further equipped with the receiving step which receives the new value of the 1st communication link setting out at least from an external server system through an access port for.

[Claim 62] The connection step which uses a digital signal transfer means and connects a client system to an usable access port, The request step which requests the 1st communication link setting out to an external server system at least through an access port in front of a setting-out step, The receiving step which receives the new value of the 1st communication link setting out at least from an external server system through an access port before a setting-out step, The correspondence procedure according to claim 47 characterized by having further the reboot step which reboots a client system following a setting-out step.

[Claim 63] The distinction step to distinguish whether the 1st communication link setting out is static setting out before a distinction step, and a client system is the configuration of receiving a new value When it is distinguished that a client system is not the configuration of receiving a new value, The correspondence procedure according to claim 47 characterized by having further the configuration step which makes cline TOSHISUTEMU a configuration so that a new value may be received including the modification step which changes the 1st communication link setting out into a dynamic thing from a static thing.

[Claim 64] The correspondence procedure according to claim 38 or 47 characterized by having further the connection step which connects a client system to an usable access port, and the communication link step which communicates by the Internet through an usable access port.

[Claim 65] A preservation step is a correspondence procedure according to claim 38 or 47 characterized by having further the step which saves the 1st communication link setting out at nonvolatile memory.

[Claim 66] A distinction step is a correspondence procedure according to claim 38 or 47 characterized by having the step which distinguishes whether setting out chosen from the group of setting out of a network configuration and setting out of control is set up appropriately.

[Claim 67] A distinction step is a correspondence procedure according to claim 38 or 47 characterized by having the step which distinguishes whether it is setting out chosen from the group of an IP address, the gateway address, the DNS address, network setting out, file common setting out, and setting out, such as browsing control point setting.

[Claim 68] It is the communication system for performing the communication link between a client system and an electrical-communication network. A client system Have two or more communication link setting out, and client software for performing the communication link between a client system and an electrical-communication network is performed. A distinction means to distinguish whether communication link setting out for performing the communication link between a client system and an electrical-communication network was appropriately set up in the client system, A preservation means to save the 1st communication link setting out in memory at least in a client system if communication link setting out is not set up appropriately and a distinction means will distinguish, Communication system characterized by having a modification means to change the 1st communication link setting out at least in a client system if communication link setting out is not set

up appropriately and a distinction means will distinguish.

[Claim 69] It is the communication system for performing the communication link between a client system and an electrical-communication network. A client system Have two or more communication link setting out, and client software for performing the communication link between a client system and an electrical-communication network is performed. A means to distinguish whether it is constituted so that a client system may receive the new value of the 1st communication link setting out, A preservation means to save the 1st value of the 1st communication link setting out at least in memory when the client system has the composition of receiving the new value of the 1st communication link setting out, Communication system characterized by having a setting-out means to set up the 1st communication link setting out at least using the new value of the 1st communication link setting out.

[Claim 70] In order to be a data storage medium equipped with the mechane-readable code used in a computer system including a means to decode a code, from a preservation medium and to perform the communication link between a client system and an electrical-communication network A distinction means to distinguish whether communication link setting out was appropriately set up in the client system, A means in a client system to save the 1st communication link setting out in memory at least when the distinction means was not set up appropriately and communication link setting out distinguishes, The data storage medium by which communication link setting out is characterized by having a means in a client system to change the 1st communication link setting out at least by it when the distinction means was not set up appropriately and it distinguishes.

[Claim 71] It is the data storage medium which memorizes the mechane-readable code used by the computer system including a means to decode a code from a data storage medium. A distinction means to distinguish whether the client system has the composition of receiving the new value of the 1st communication link setting out, A means to save the 1st value of the 1st communication link setting out in memory at least when the client system has the composition of receiving the new value of the 1st communication link setting out, The data storage medium characterized by having a means to set up the 1st communication link setting out at least using the new value of the 1st communication link setting out.

[Claim 72] It is an approach for performing the communication link between a client system, a server system, and an electrical-communication network. A client system Central processing unit (CPU) Volatile work-piece memory relevant to CPU, It has a communication interface and client software for performing the communication link between a client system and an electrical-communication network is performed. A server system The offer step which offers the set of the bill option which performs server software for performing the communication link between two or more client systems and an electrical-communication network, and includes at least one method of payment, The step which specifies the bill approach and is transmitted to a server system from a client system, The step which transmits bill license / denial signal to a client system from a server system, The correspondence procedure characterized by having the step which performs two-way communication between an electrical-communication network and a client system through a server system when a license signal is offered in bill license / denial signal transmitting step.

[Claim 73] The correspondence procedure according to claim 72 characterized by having further the allocation step which assigns an IP address to a client system before the step which offers a claim

optional list.

[Claim 74] The correspondence procedure according to claim 72 characterized by providing the distinction step which distinguishes whether the client software of a client system runs short the component required for the communication link with an electrical-communication network, the offer step which provides a client system with a lack component from the client software of a client system, and the install step in which the client software of a client system installs a lack component before the step which offers the set of a claim option.

[Claim 75] The correspondence procedure according to claim 72 characterized by to provide the distinction step which distinguishes whether the client software of a client system runs short the component required for the communication link with an electrical-communication network, the search step which searches the install file of a client system equipped with said lack component, and the install step which installs the lack component of the client software detected in the search step before the step which offers the set of a claim option.

[Claim 76] The distinction step which distinguishes whether the client software of a client system runs short the component required for the communication link with an electrical-communication network, The search step which searches the install file of a client system equipped with said lack component, The step which provides a client system with other lack components which were not detected in the search step from a server system, The correspondence procedure according to claim 72 characterized by providing the install step which installs the lack component of the client software detected in the search step before the step which offers the set of a claim option.

[Claim 77] The distinction step which distinguishes whether the client software of a client system is equipped with the old component, The step which provides cline TOSHISUTEMU with each present version of the old component detected in said distinction step from a server system, The correspondence procedure according to claim 72 characterized by providing the install step which installs each present version of the old component detected in said distinction step before the step which offers the set of a claim option.

[Claim 78] The distinction step which distinguishes whether the client system is equipped with the suitable network configuration which can perform communications processing with an electrical-communication network, and registration setting out, When were appropriately set up in said distinction step and it is distinguished, by the preservation step which saves said setting out at volatile memory, and the client system The request step which requests assignment of an IP address to a server system, The correspondence procedure according to claim 72 characterized by providing the receiving step which receives the IP address from a server system in a client system before the step which offers the set of a claim option.

[Claim 79] The correspondence procedure according to claim 78 characterized by providing before the step which moreover offers the set of a claim option by Ushiro of the step of reception of the transmitting step which transmits the request of the set of the claim option which can be offered to a server system from a client system of said IP address.

[Claim 80] The distinction step which distinguishes whether the client system is equipped with the suitable network configuration which can perform the communication link with an electrical-communication network, and registration setting out, The preservation step which saves said setting out at volatile memory if setting out is distinguished in said distinction step as it is suitable, The step

which requests assignment of an IP address to a server system from a client system, The correspondence procedure according to claim 72 characterized by providing the receiving step which receives said IP address in a client system from a server system before the step which offers the set of a claim option.

[Claim 81] The correspondence procedure according to claim 72 characterized by having further the step which records the step which maintains each identification information of said client system which communicates with said server system in a database format to a server system when two or more client systems communicate with a server system, the claim information on each client system, and the data showing the claim amount of money accumulated by each of said client system on said database.

[Claim 82] The data showing said claim amount of money are a correspondence procedure according to claim 81 characterized by including the data showing a connect time.

[Claim 83] The correspondence procedure according to claim 81 characterized by having further the step which records the data showing the sum total claim amount of money of a corresponding client system, the transmitting step which transmits said total amount of money to a network management system, and the step which processes bill issuance according to the sum total claim amount of money in a network management system following cutting processing of a client system.

[Claim 84] The transmitting step which transmits periodically the fixed connection signal for checking that a client system connects to a server system from a client system, The offer step which provides a server system with a clock signal, and the distinction step to which said fixed connection signal distinguishes in a server system whether it was received within the predetermined period based on said clock signal from said client system, The correspondence procedure according to claim 72 characterized by having further the setting-out step which sets up a cutoff parameter in said server system when said fixed connection signal was not received from said client system within the predetermined period and it is distinguished in a distinction step.

[Claim 85] It is an approach for performing the communication link between a client system, a server system, and an electrical-communication network. A client system Central processing unit (CPU) Volatile work-piece memory connected with CPU, It has a communication interface and client software for performing the communication link between a client system and an electrical-communication network is performed. A server system The offer step which offers the claim optional list which performs server software for performing the communication link between two or more client systems and an electrical-communication network, and includes at least one method of payment, The step which specifies an Invoicing method and transmits it to a server system from a client system, The step which transmits the demand of license to a remote license system from a server system, The step which transmits a temporary license signal to a client system from a server system before a license signal is received by the server system from a remote license system, The correspondence procedure characterized by having the step which performs two-way communication between an electrical-communication network and a client system.

[Claim 86] The correspondence procedure according to claim 85 characterized by having further the receiving step which receives a denial signal from a remote license system, the transmitting step which transmits a denial signal to a client system from a server system, and the step which interrupts the two-way communication between an electrical-communication network and a client system in a

server system.

[Claim 87] The correspondence procedure according to claim 85 characterized by having further the step which transmits a denial signal to a client system from a server system, and the step which transmits the claim information on an addition to a server system from a client system.

[Claim 88] It is the communication system for performing the communication link between a client system, a server system, and an electrical-communication system. A client system Client software for performing the communication link between a client system and an electrical-communication network is performed. A server system A means to offer the claim optional list which performs server software for performing the communication link between two or more client systems and an electrical-communication network, and includes at least one approach of paying, A means to specify an Invoicing method and to transmit it to a server system from a client system, A means to transmit bill license / denial signal to a client system from a server system, Communication system characterized by having a means to perform two-way communication between an electrical-communication network and a client system through a server system if a license signal is received by the client system.

[Claim 89] Communication system according to claim 88 characterized by having further the means which assigns an IP address to a client system.

[Claim 90] Communication system according to claim 88 characterized by having further a means to distinguish whether the client software of a client system runs short the component required for the communication link with an electrical-communication network, a means by which the client software of a client system provides a client system with a lack component from a server system, and a means by which the client software of a client system installs a lack component.

[Claim 91] Communication system according to claim 88 characterized by having a means to distinguish whether the client software of a client system runs short the component required for the communication link with an electrical-communication network, a means to search the install file of a client system equipped with said lack component, and a means to install the lack component of client software.

[Claim 92] The communication system according to claim 88 characterized by to have further a means distinguish whether the client software of a client system lacks the component required for the communication link with an electrical-communication network, a means search the install file of a client system equipped with said lack component, a means offer the lack component of an addition to a client system from a server system, and a means install the lack component of the client software with which the client system was provided by means provide.

[Claim 93] Communication system according to claim 88 characterized by having further a means to distinguish whether the client software of a client system is equipped with an old component, a means to provide a client system with the latest version corresponding to an old component from a server system, and a means to install the latest version which balanced said old component, respectively.

[Claim 94] Communication system according to claim 88 characterized by having a means by which a client system distinguishes whether it has the suitable network configuration for performing the communication link with an electrical-communication network, and registration setting out, a means to save said setting out in volatile work-piece memory, a means to request assignment of an IP

address to a server system from a client system, and a means by which a client system receives said IP address from a server system.

[Claim 95] Communication system according to claim 94 characterized by having a means to transmit the request of the set of the claim option which can be offered to a server system from a client system.

[Claim 96] The correspondence procedure according to claim 90 characterized by having further a means to distinguish whether the client system is equipped with the suitable network configuration for performing the communication link with an electrical-communication network, and registration setting out, a means to save said setting out in volatile work-piece memory, a means to request assignment of an IP address to a server system from a client system, and a means by which a client system receives said IP address from a server system.

[Claim 97] [when two or more client systems communicate with a server system] A means to maintain each identification information of said client system which communicates with said server system in a database format to a server system, A means to memorize the data showing the sum total claim amount of money accumulated by said claim information on each client system, and each client system as a thing of each of said client system in said database, respectively, The correspondence procedure according to claim 88 characterized by preparing for a pan.

[Claim 98] The data showing said sum total claim amount of money are communication system according to claim 97 characterized by including the data showing a connect time.

[Claim 99] Communication system according to claim 97 characterized by having further a means to memorize the data showing the sum total claim amount of money of each client system, a means to transmit said sum total claim amount of money to a network management system, and a means to perform bill issuance processing according to the sum total claim amount of money in a network management system, according to cutoff of a client system.

[Claim 100] A means to transmit periodically the fixed connection signal of check that a client system connects to a server system from a client system, A means to provide a server system with a clock signal, and a means to distinguish whether said fixed connection signal was received from said client system in said server system during the predetermined period according to said clock signal, Communication system according to claim 88 characterized by having further a means to set a cutoff parameter as said server system if said distinction means distinguishes that said fixed connection signal is not received from said client system during a predetermined period.

[Claim 101] Central processing unit (CPU) Volatile memory connected with CPU, It is the data storage medium which has the mechane-readable code used in a client computer system including a communication interface and a means to read and comprehend a code from a preservation medium. A means to receive a claim optional list including at least one method of payment, A means to specify an Invoicing method and to transmit it to a server system from a client system, The data storage medium characterized by having a means by which a client system receives claim license / denial signal from a server system, and a means to mind with a server system and to perform two-way communication between an electrical-communication network and a client system if a license signal is received.

[Claim 102] It is the data-logging medium which has the mechane-readable code used in the server computer system constituted so that it might have a means by which reading decodes a code, from a

data storage medium and might communicate with two or more client systems. A means to offer a claim optional list equipped with at least one method of payment, A means to receive specification of an Invoicing method from one client system, A means to transmit claim license / denial signal to one client system from a server system, The data storage medium characterized by having a means to enable it to perform two-way communication between an electrical-communication network and the client system of arbitration through a server system if a license signal is received by the client system. [Claim 103] They are a client system, a server system, and a computer operating system equipped with the communication facility for performing the communication link between electrical-communication networks. Client software is performed in order that a client system may perform the communication link between a client system and an electrical-communication network. A server system A means to receive the claim optional list which performs server software in order to perform the communication link between two or more client systems and an electrical-communication network, and includes at least one method of payment from said server system, A means to specify an Invoicing method and to transmit it to a server system from a client system, A means to receive claim license / denial signal from a server system to a client system, The computer operating system characterized by having a means to perform two-way communication between an electrical-communication network and a client system through a server system when a license signal is received from a server system in a signal step.

[Claim 104] It is an approach for performing the communication link between a client system, a server system, and an electrical-communication network. A client system Client software for performing the communication link between a client gardenia fruit stem and an electrical-communication network is performed. A server system The step which performs server software for performing the communication link between two or more client systems and an electrical-communication network, and provides a client system with a network setting-out parameter from a server system, The step which specifies an Invoicing method and transmits it to a server system from a client system, In the step which transmits claim license / denial signal to a client system from a server system, and claim license / denial signal transmitting step The correspondence procedure characterized by having the step which performs two-way communication between an electrical-communication network and a client system through a server system if a license signal is offered. [Claim 105] The correspondence procedure according to claim 104 characterized by having further the step which returns network setting out memorized in front of the step which offers a network setting-out parameter following the step which memorizes network setting out of a client system, and the step which performs two-way communication between an electrical-communication network and a client system.

[Claim 106] The server system which performs server software in order to be equipment for communicating in an electrical-communication network, to have a processor and to control actuation of a server system, At least one client system which has a central processing unit (CPU) and a communication interface, Two or more access ports formed from each access port of a configuration of linking for the communication link between electrical communication and a server system, and linking to electrical communication and a client system, A means to provide with each authentication the client system concerned to which it was linked by the specific access port, The communication device characterized by having server software equipped with a means by which receive each

authentication from a client system and this identifies a specific client system, and the means to which a claim parameter is related with at least one client system.

[Claim 107] Server software is a communication device according to claim 106 characterized by including further a means to promote the communication link between a client system and an electrical-communication network.

[Claim 108] The communication device according to claim 106 characterized by having further a network administration server in a communication link condition with a server system.

[Claim 109] The communication device according to claim 106 characterized by having further said two or more server systems which can transmit data from a network administration server, and can be received.

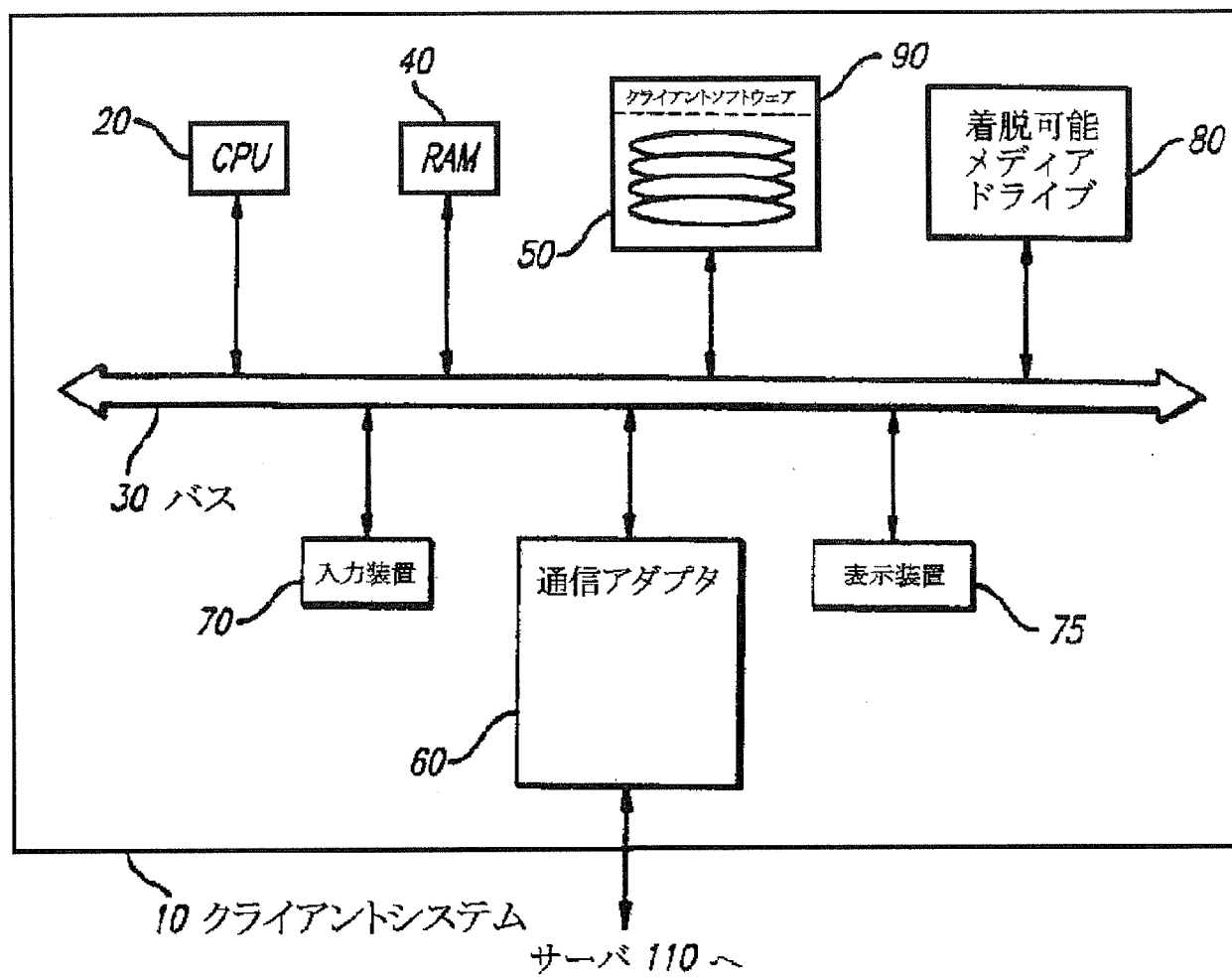


FIG. 1

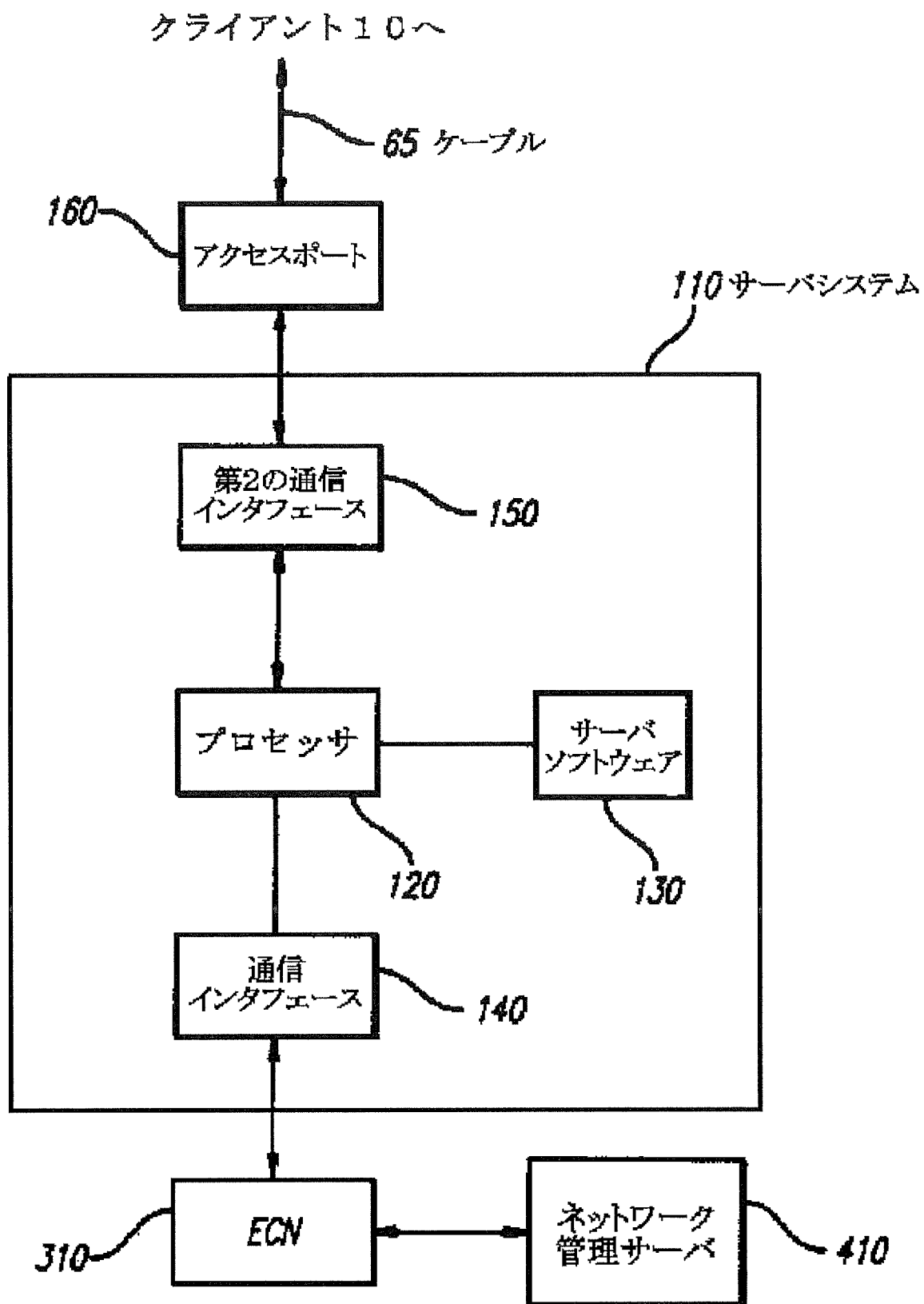
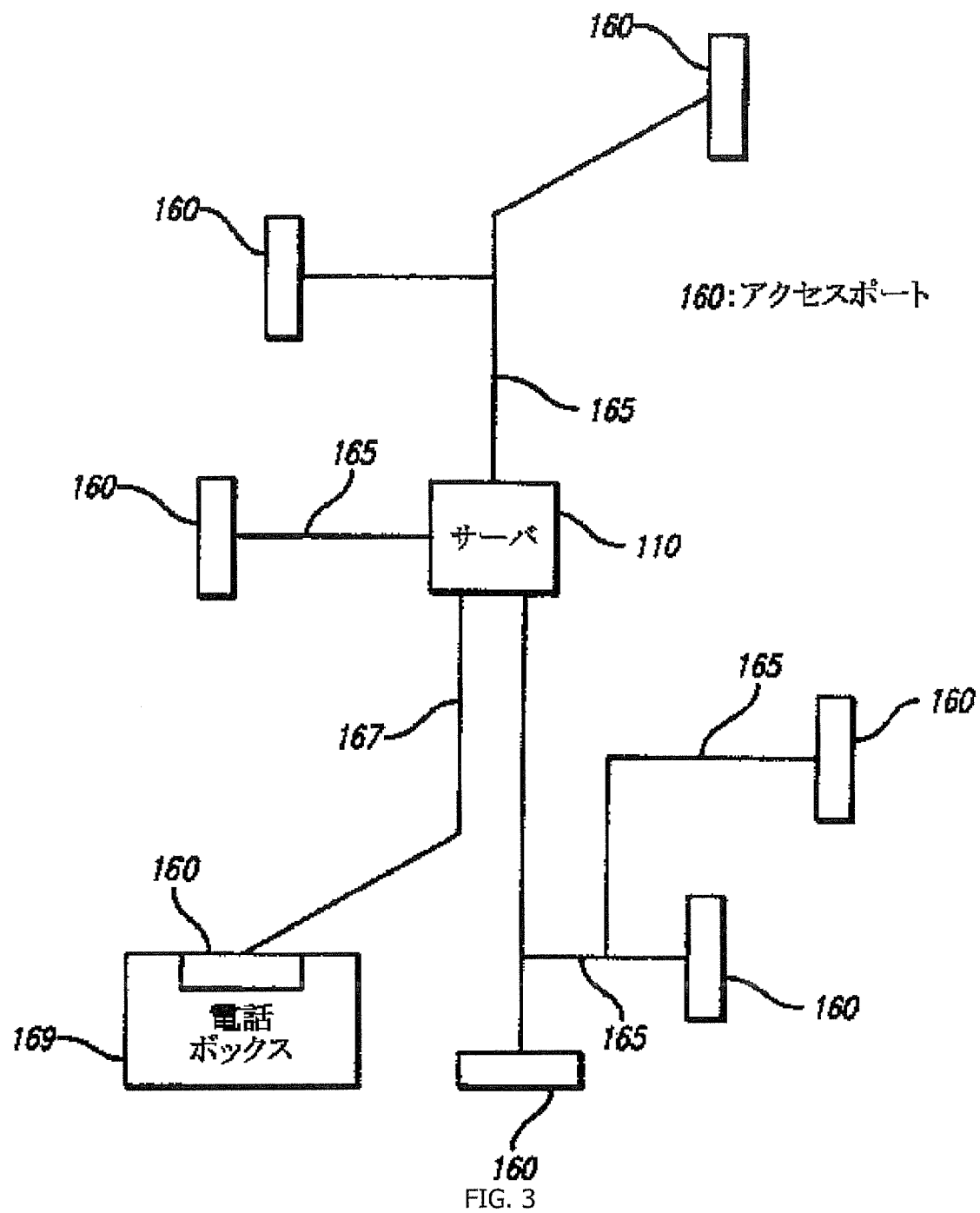


FIG. 2



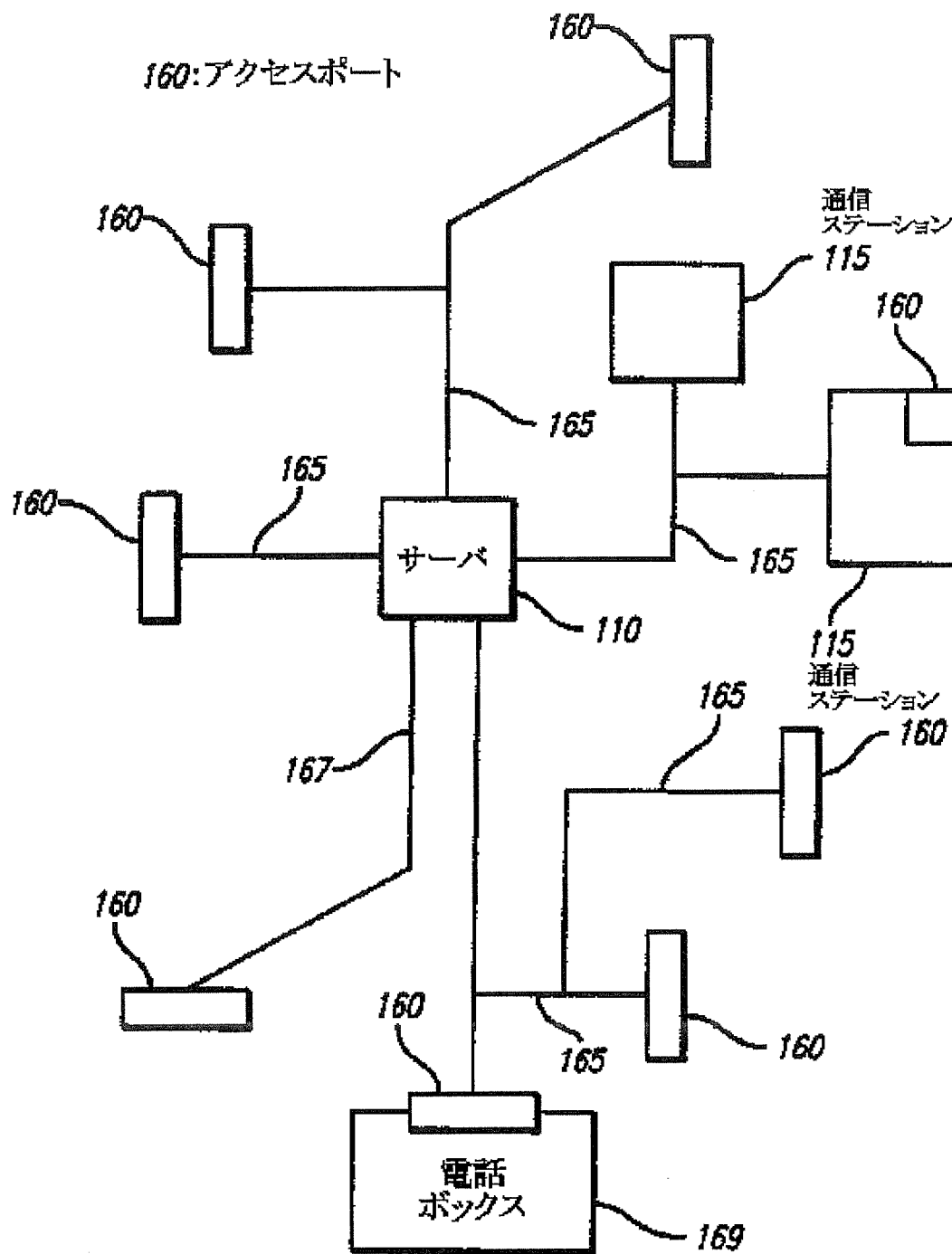


FIG. 4

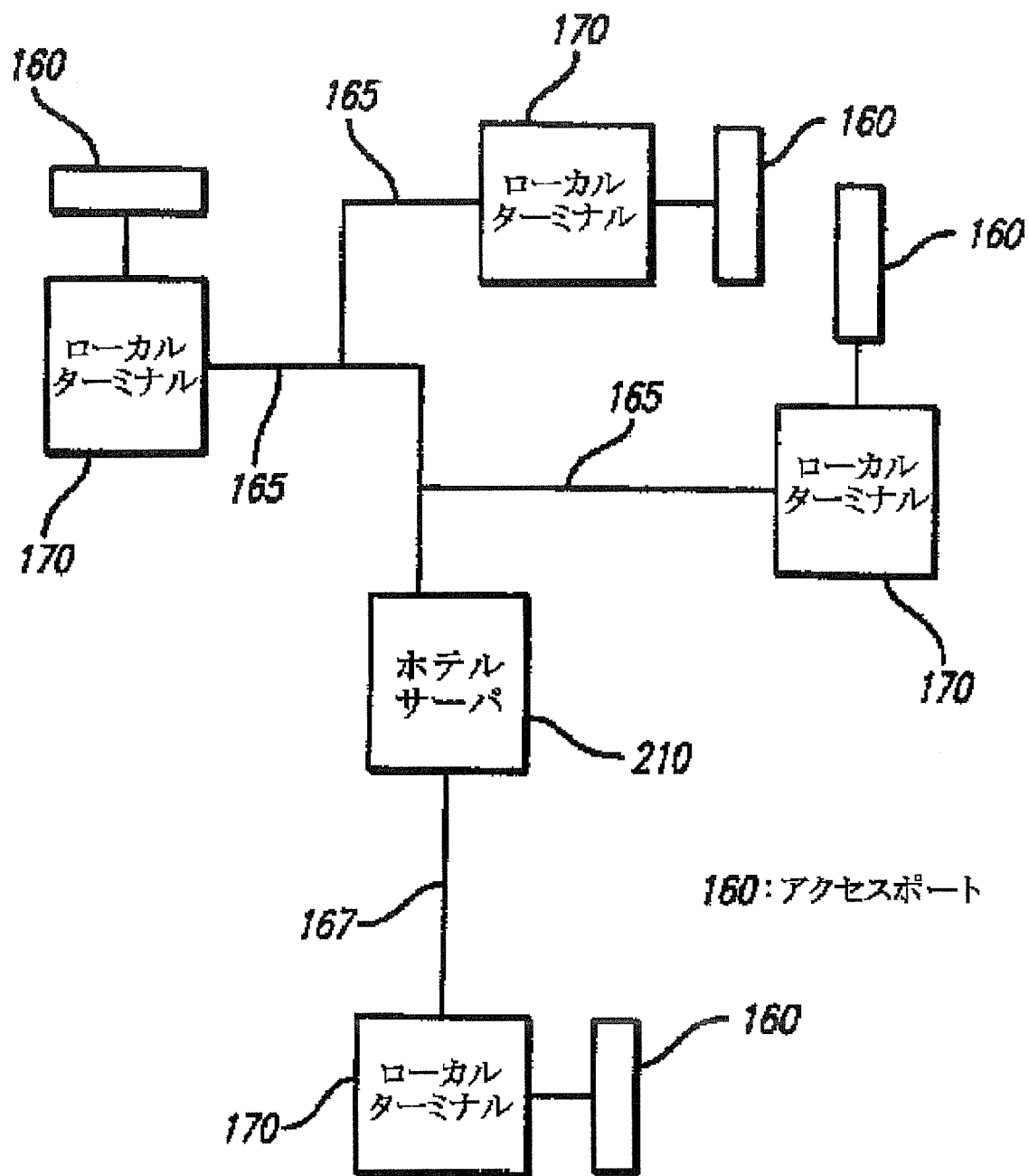


FIG. 5

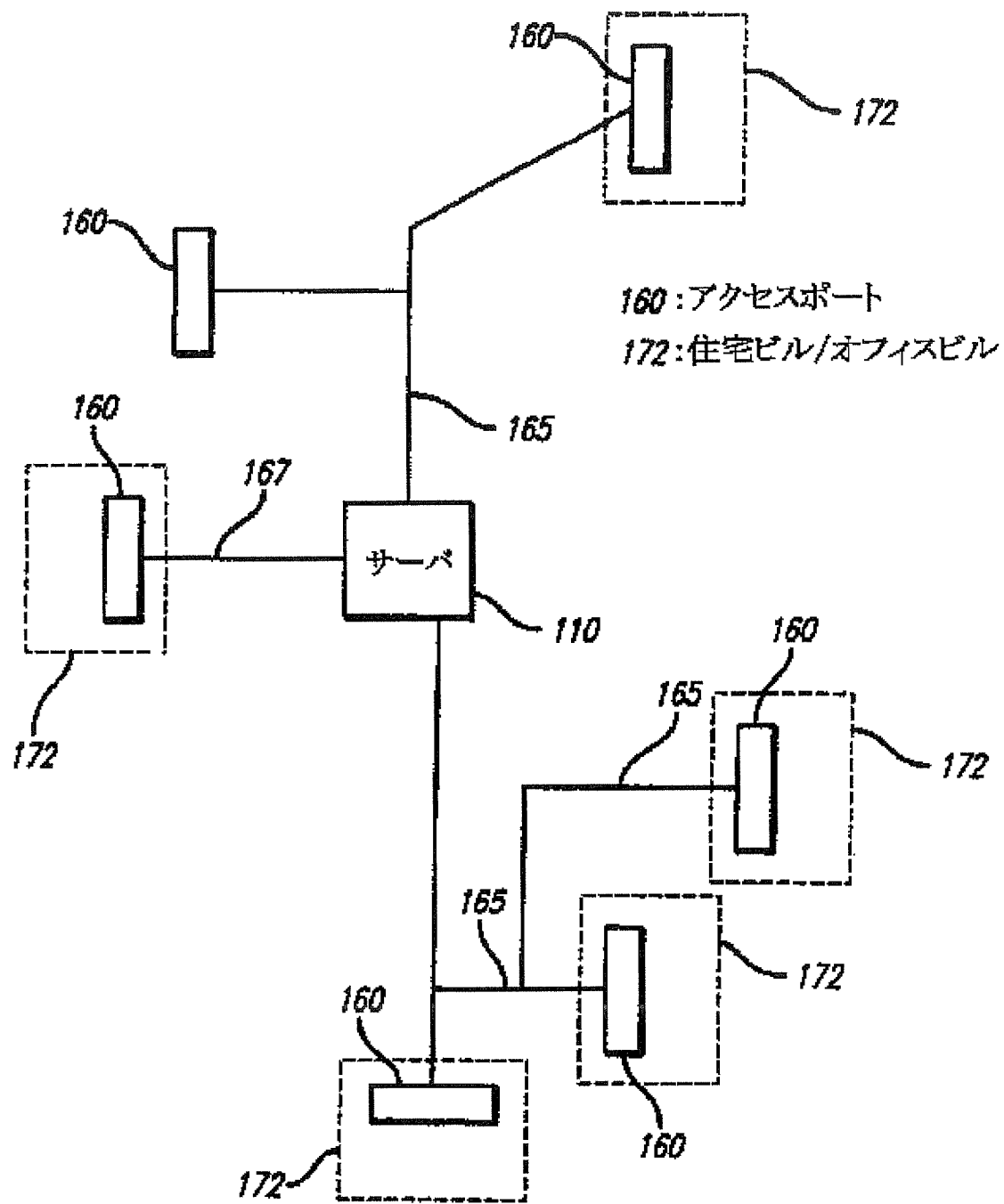


FIG. 6

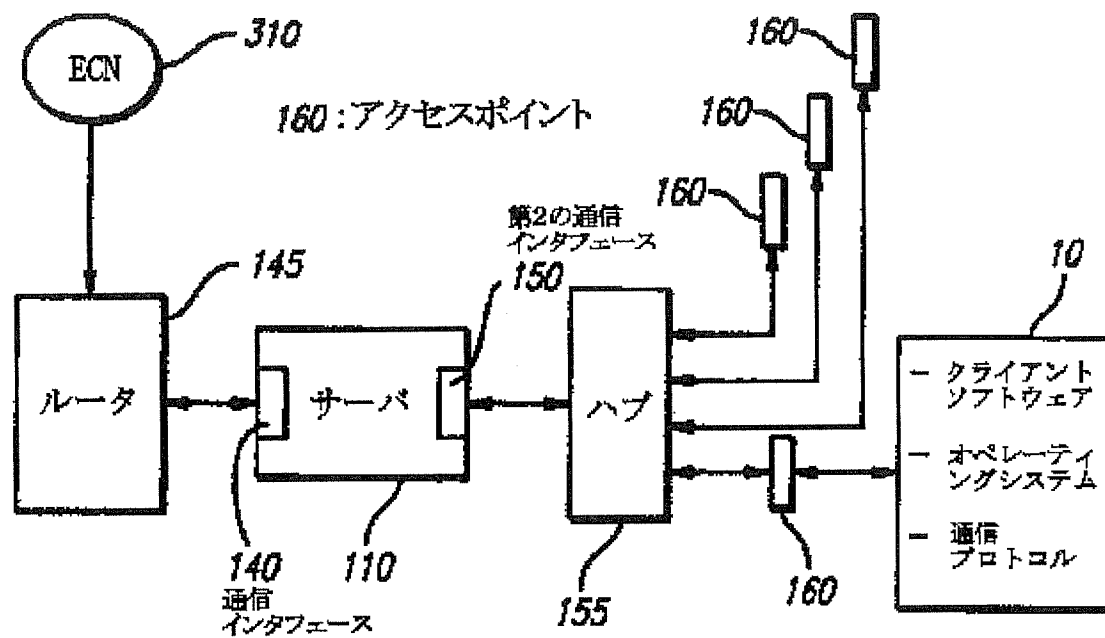


FIG. 7

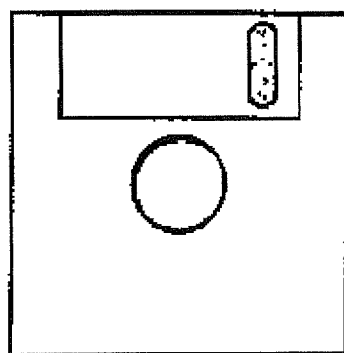


FIG. 8

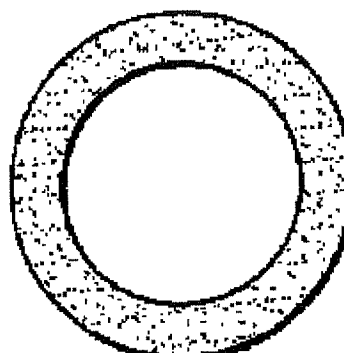


FIG. 9

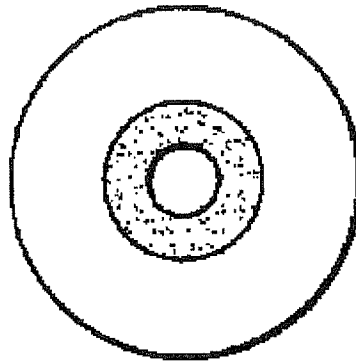


FIG. 10

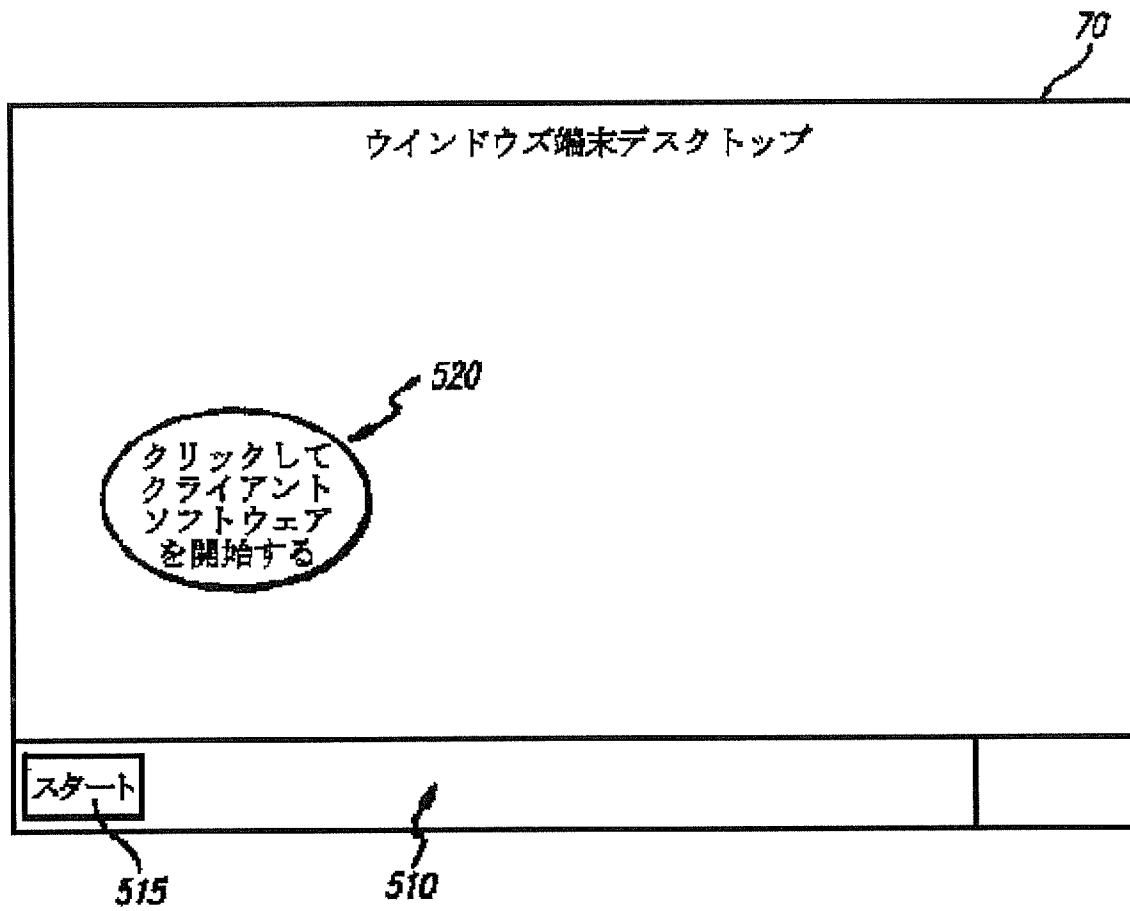


FIG. 11

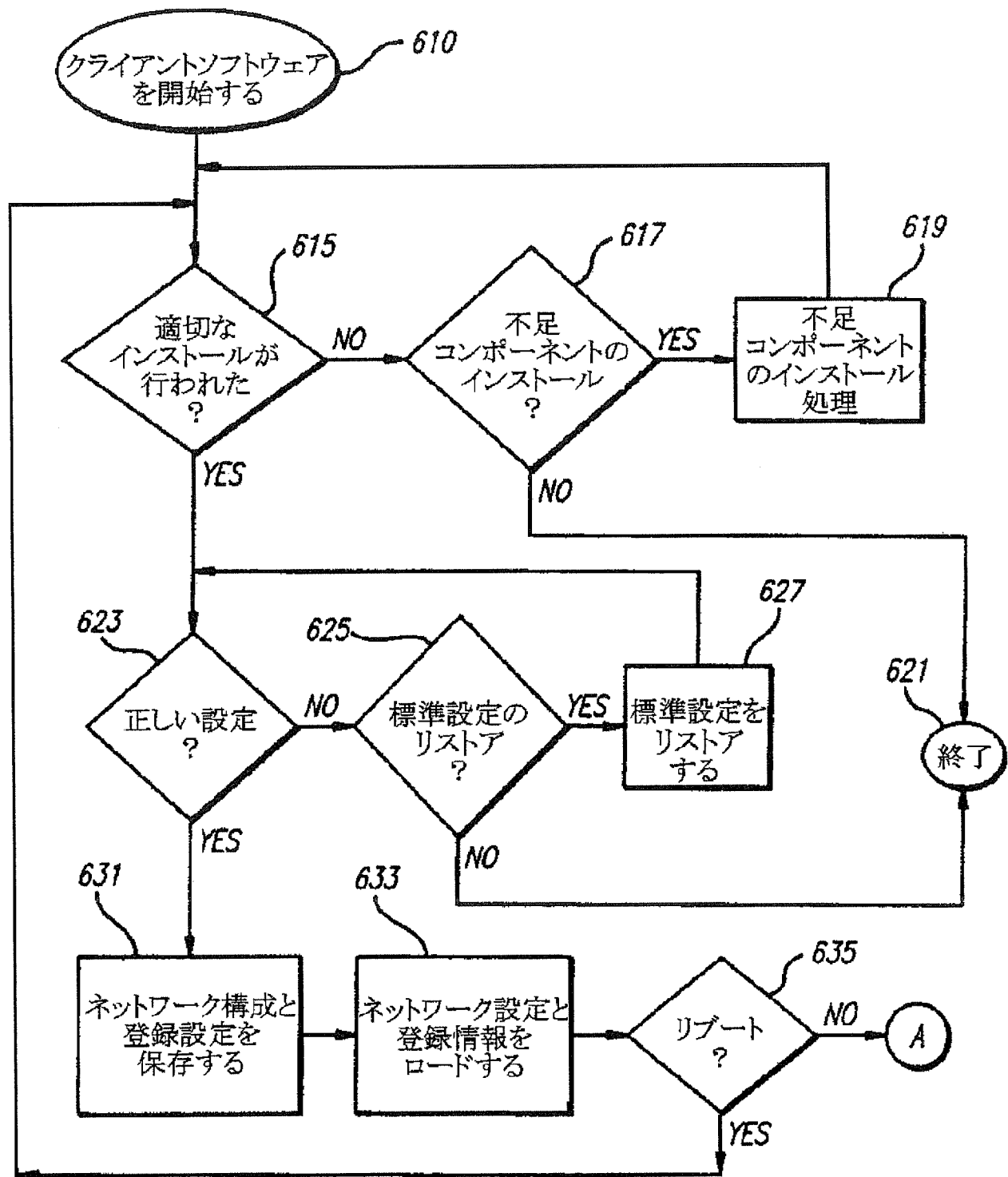


FIG. 12

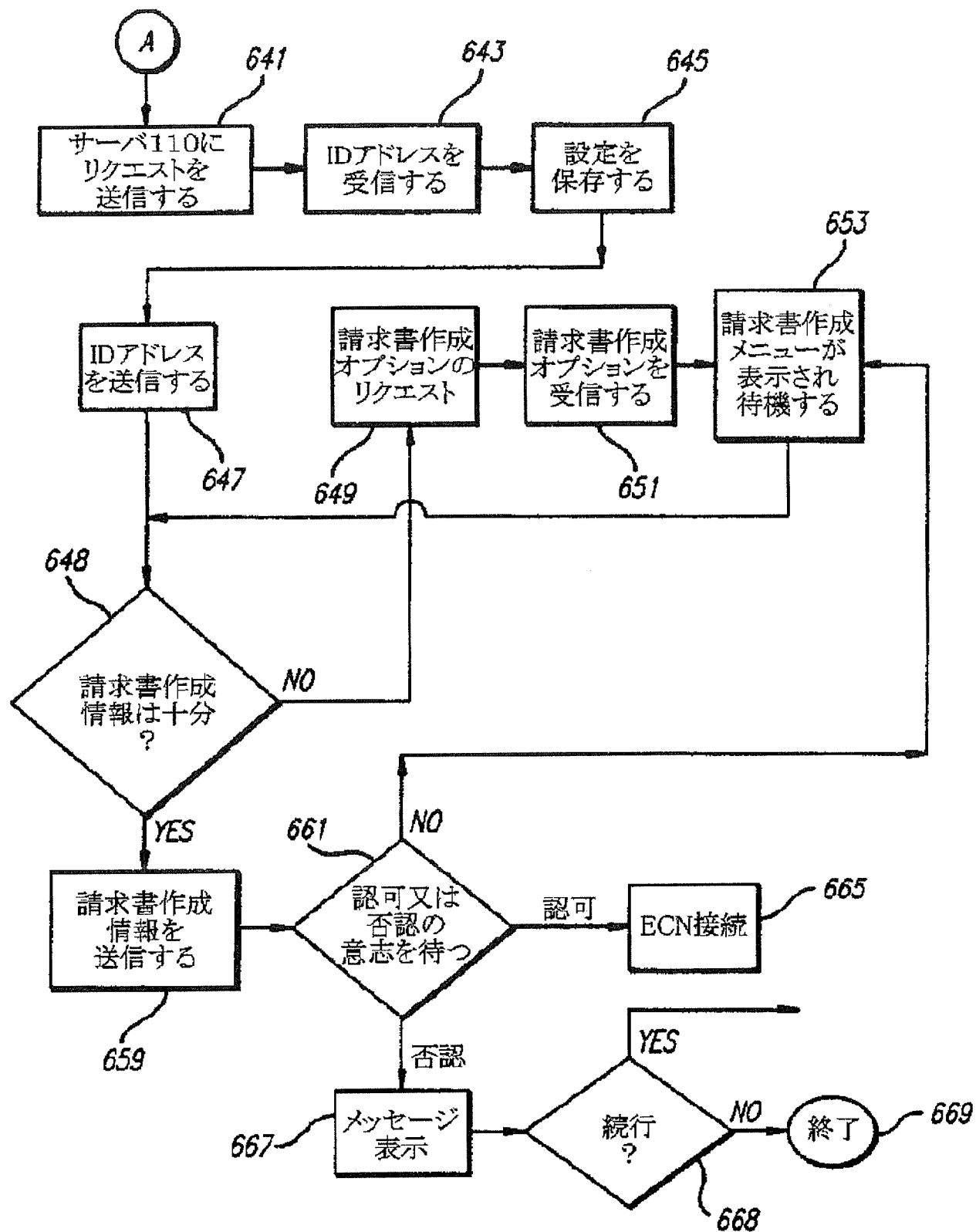
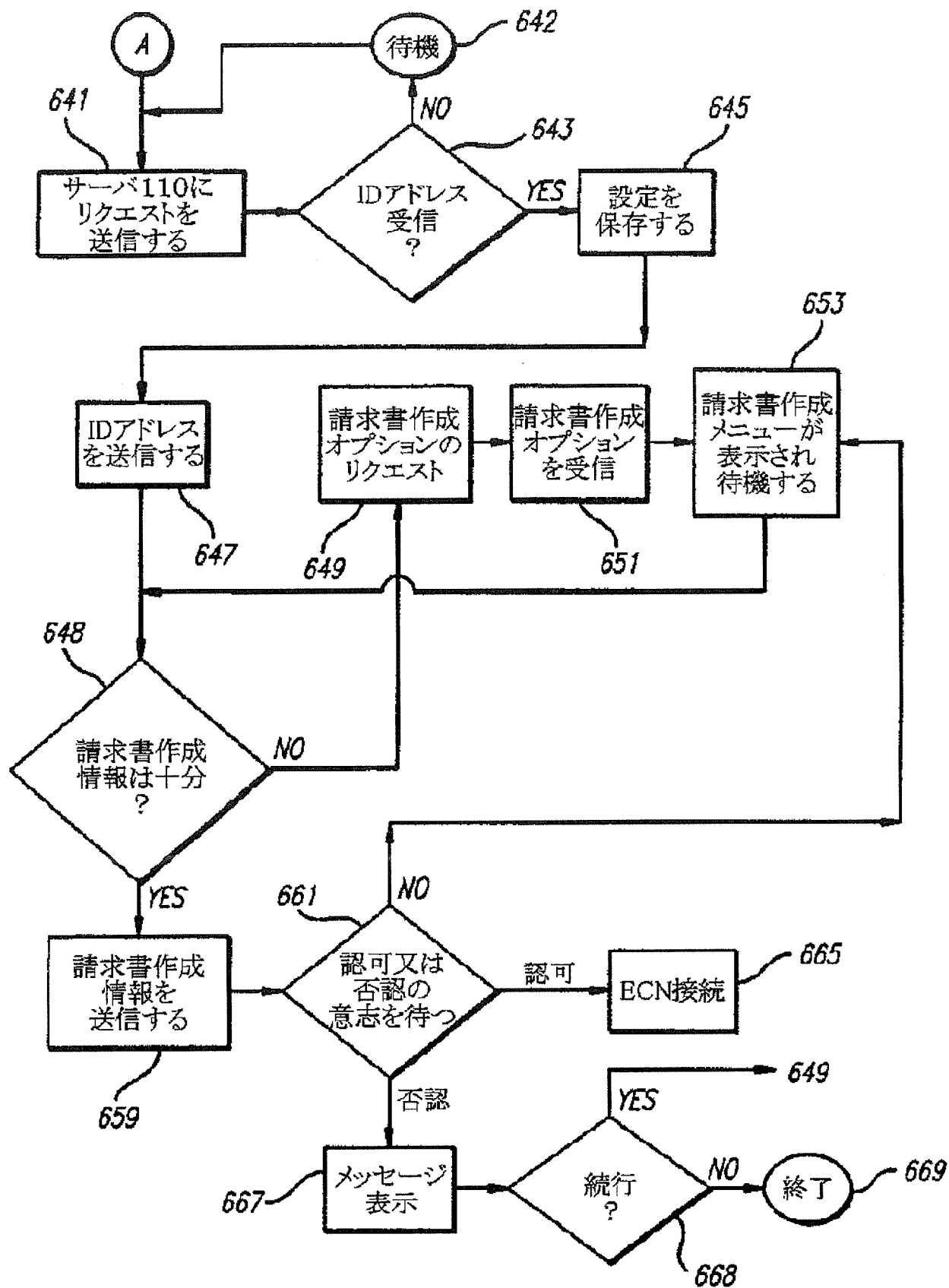
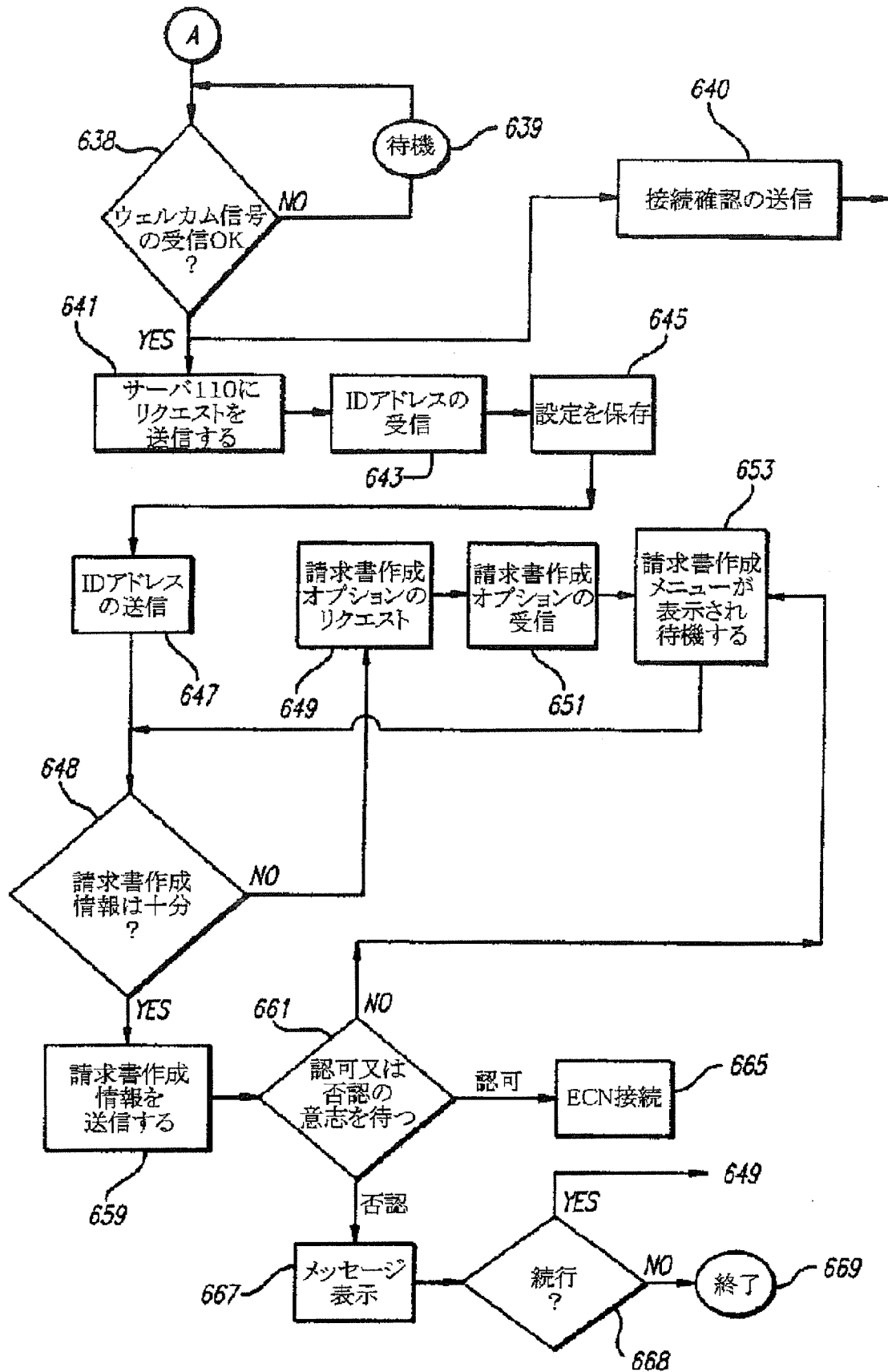


FIG. 13





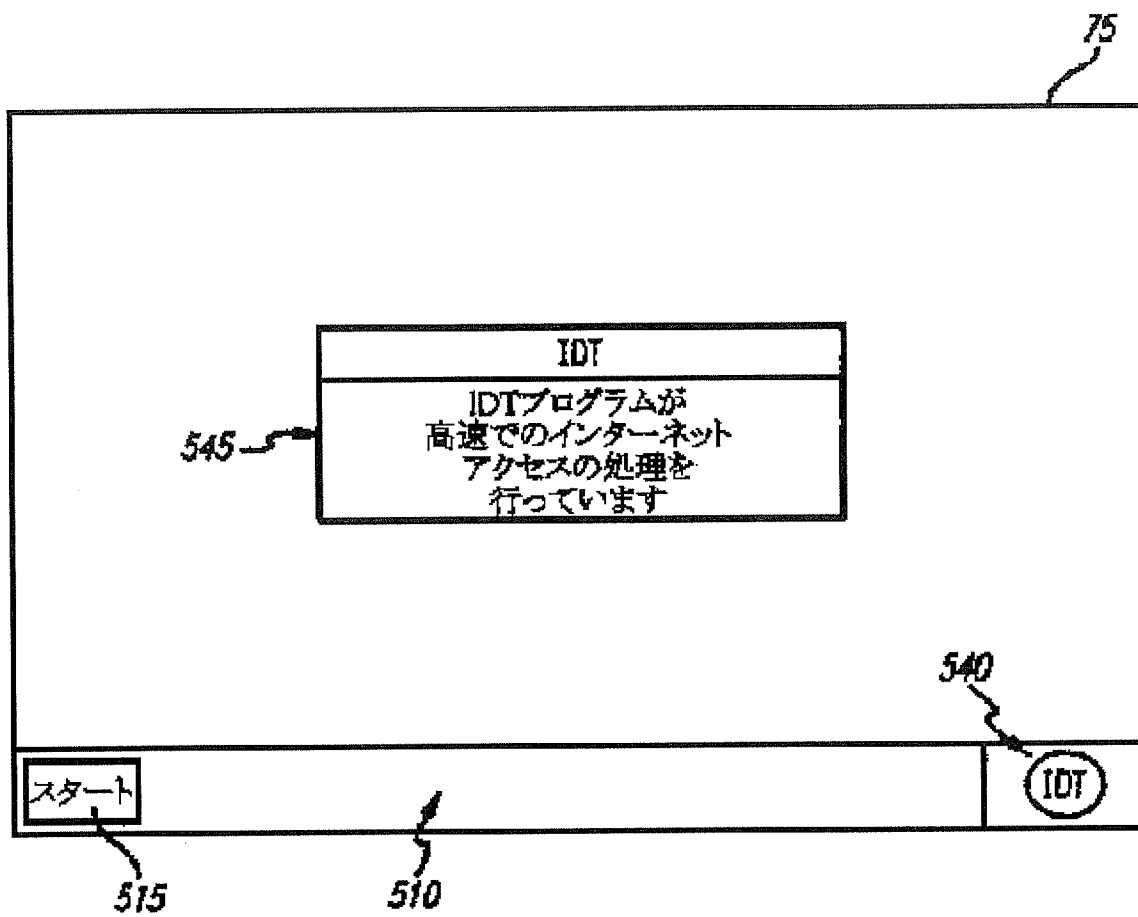


FIG. 16

75

請求書作成の構成

支払形態の選択

☐ クレジットカード

☐ ホテル料金に加算

☐ スマートカード

☐ プリペイド預金

クレジットカード番号入力

ホテルルーム番号入力

スタート

515

510

540

IDT

FIG. 17

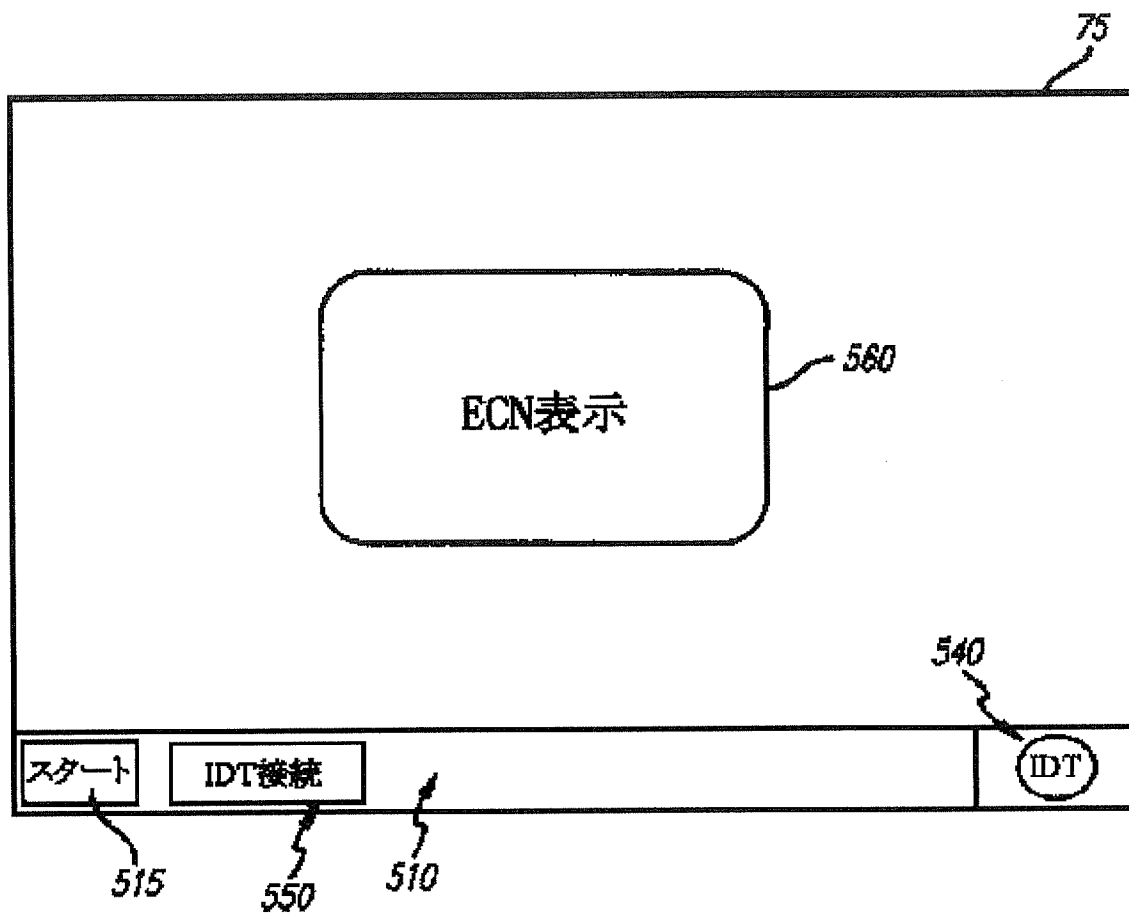


FIG. 18

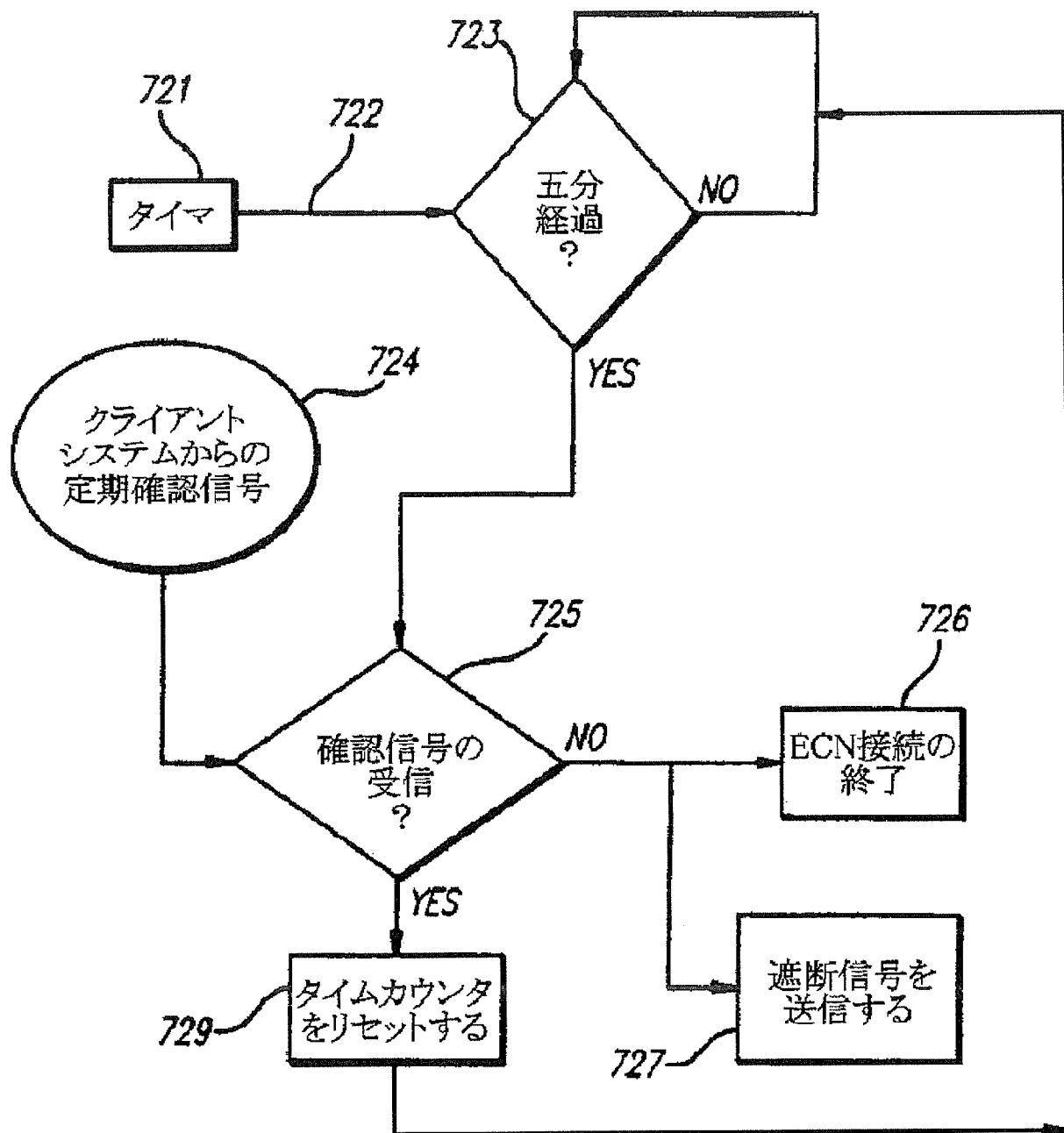


FIG. 19

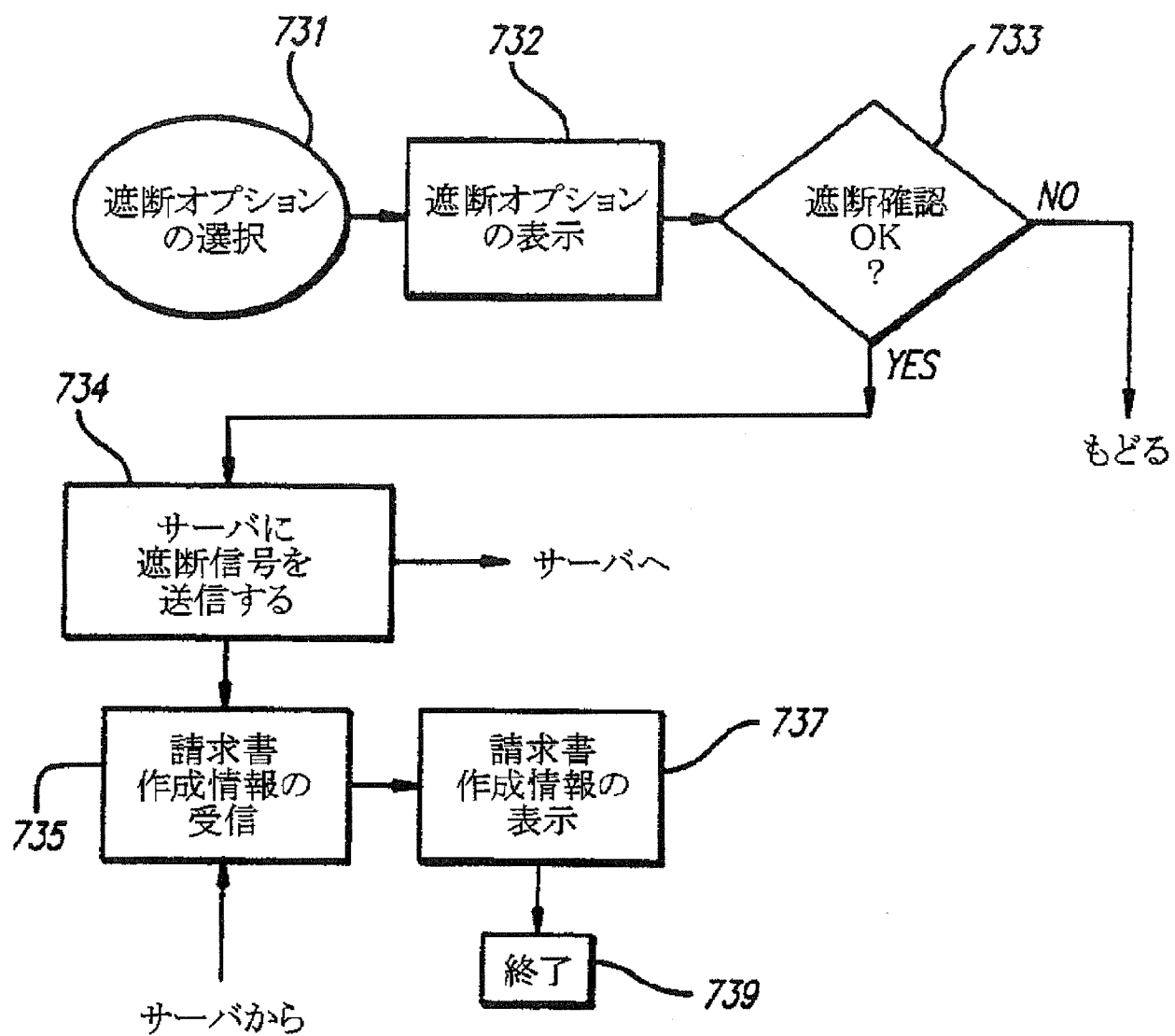


FIG. 20

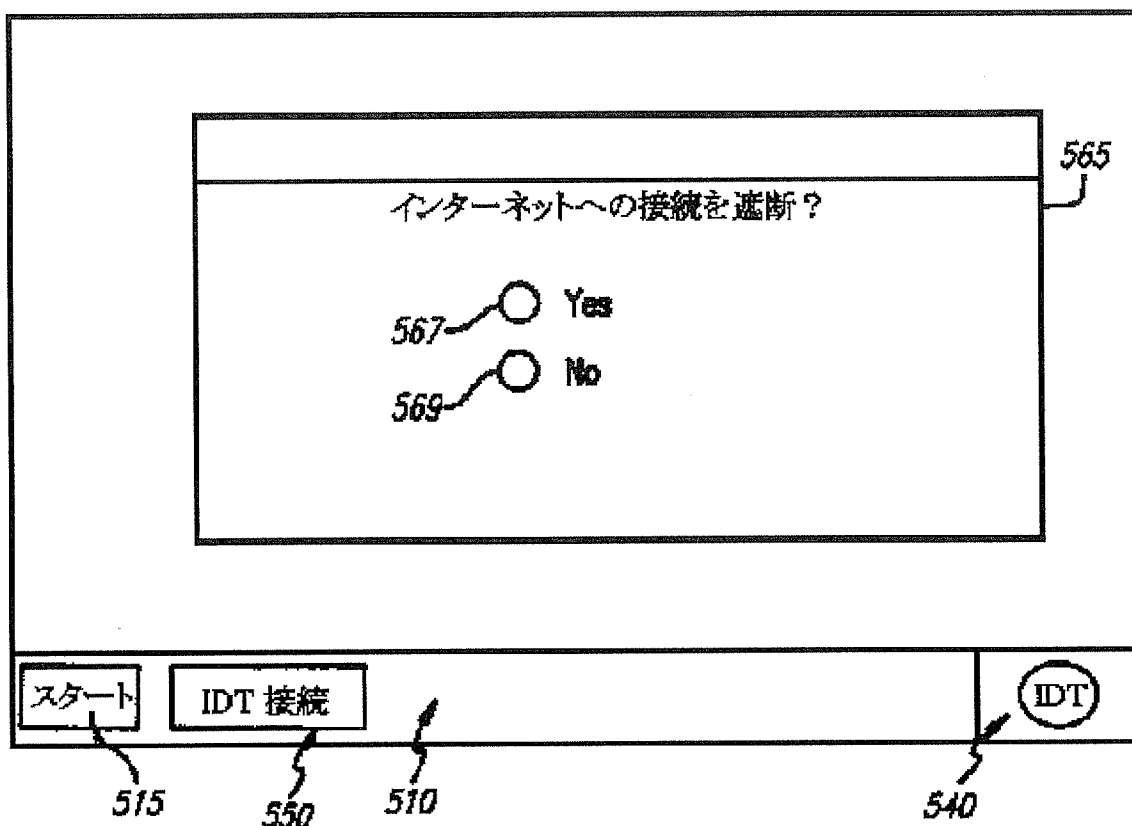
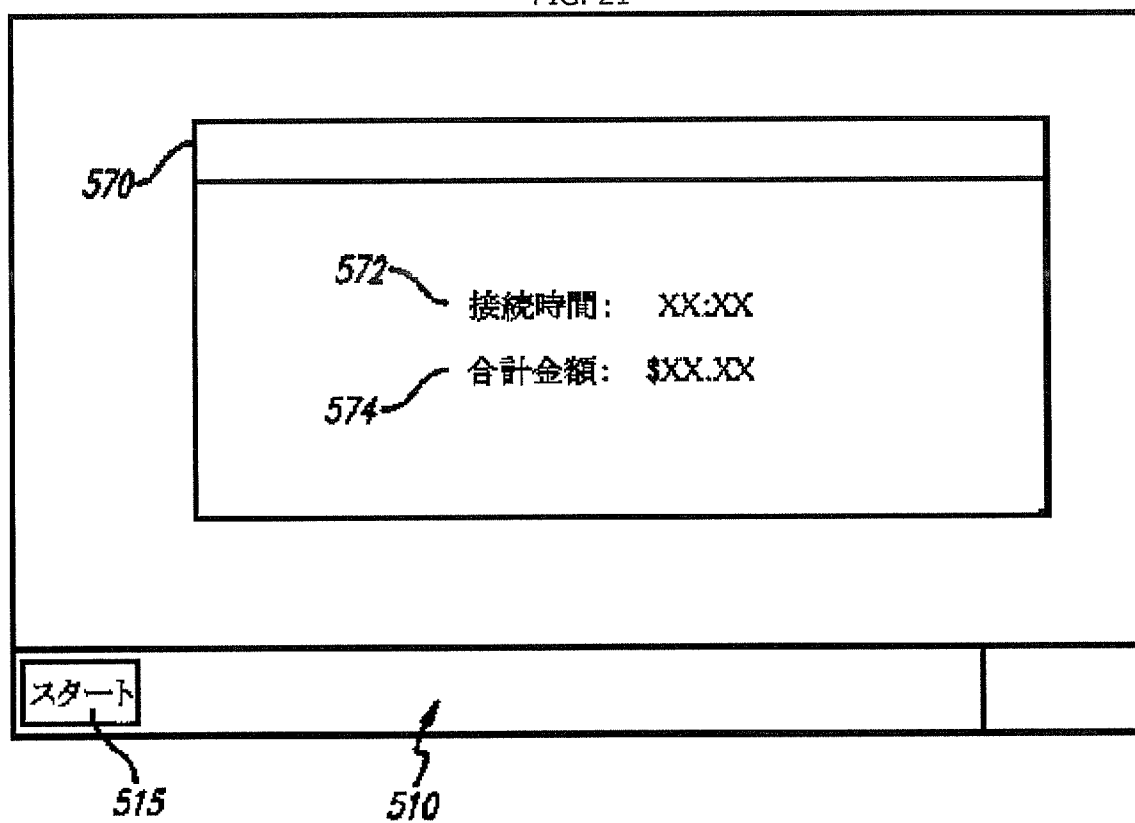


FIG. 21



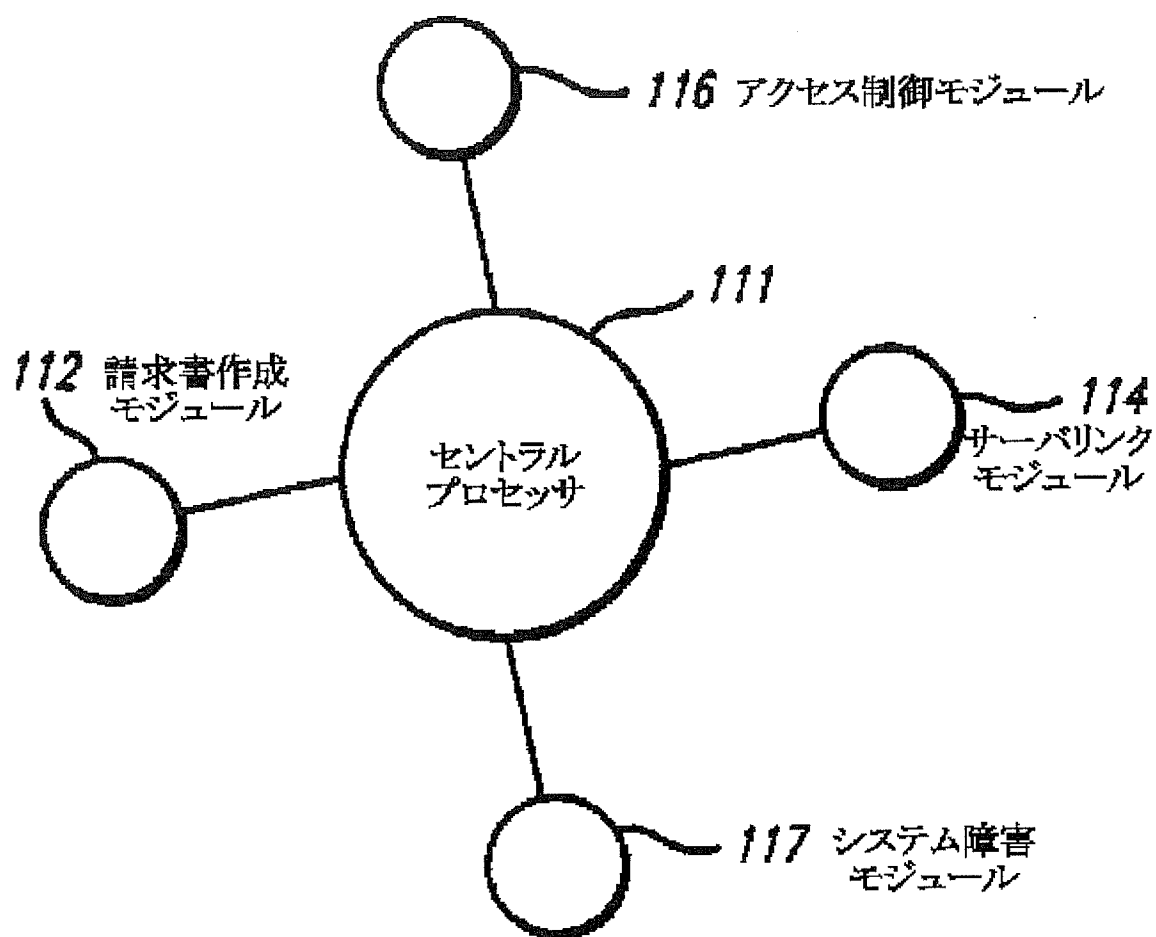
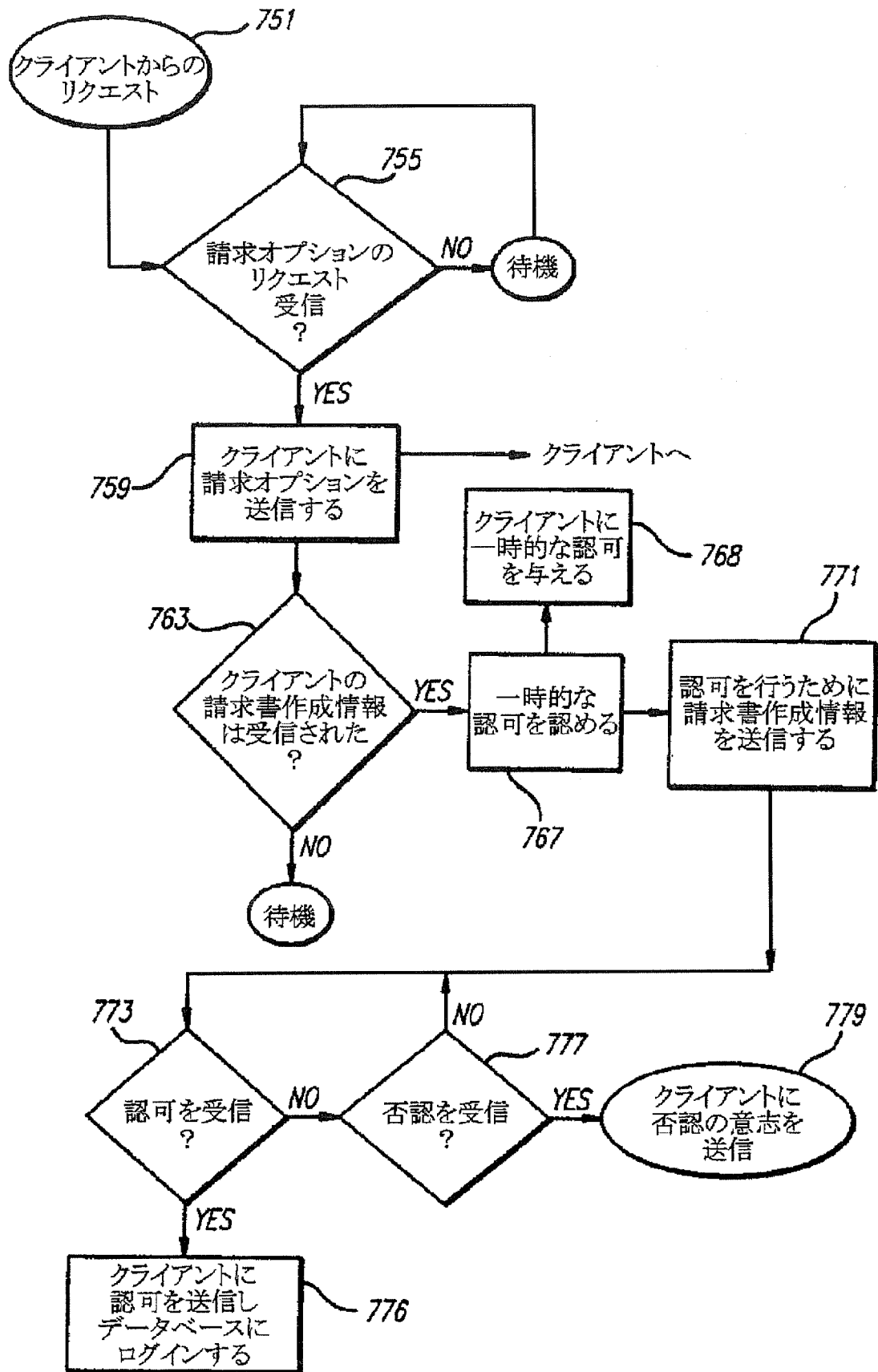
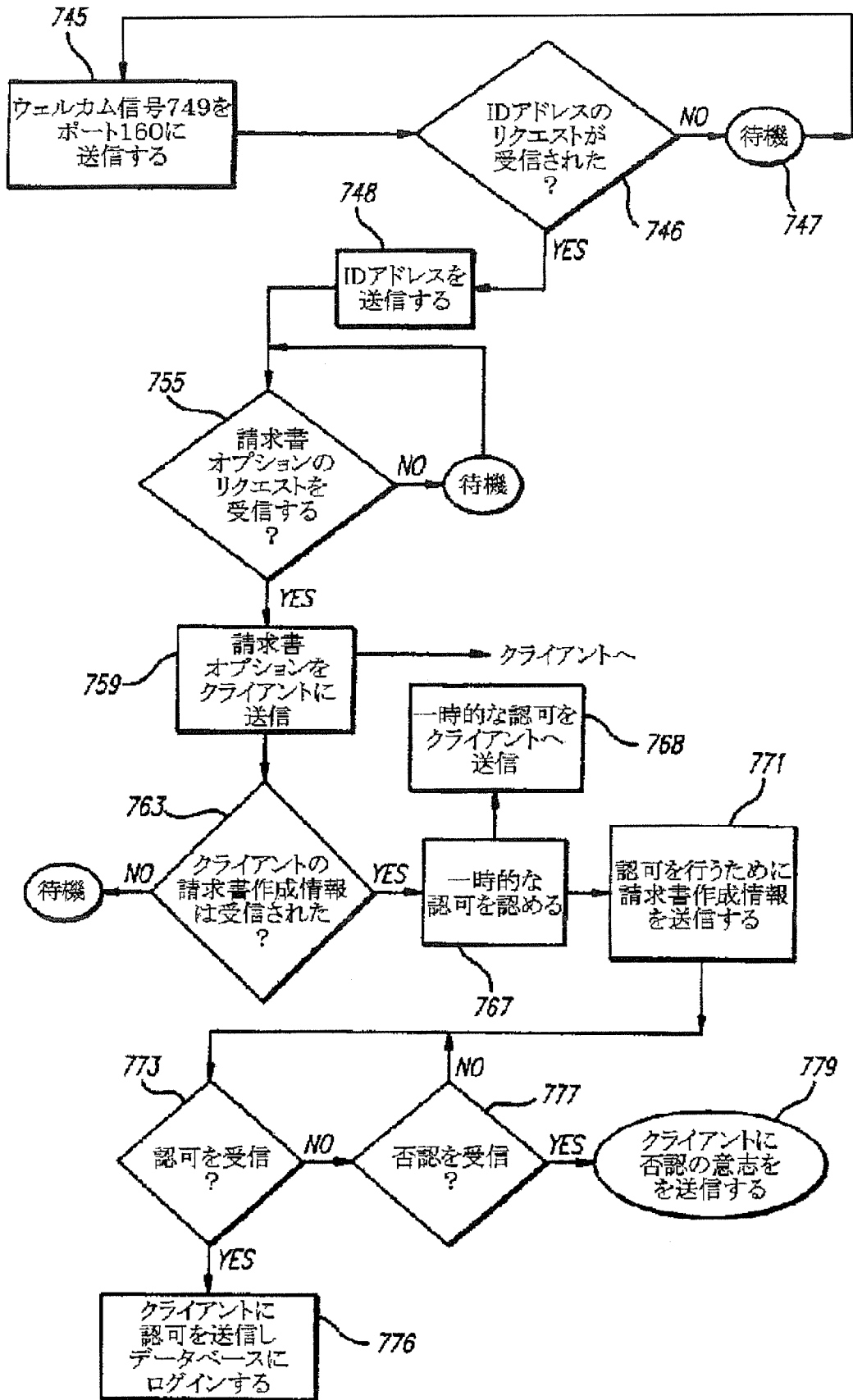


FIG. 23





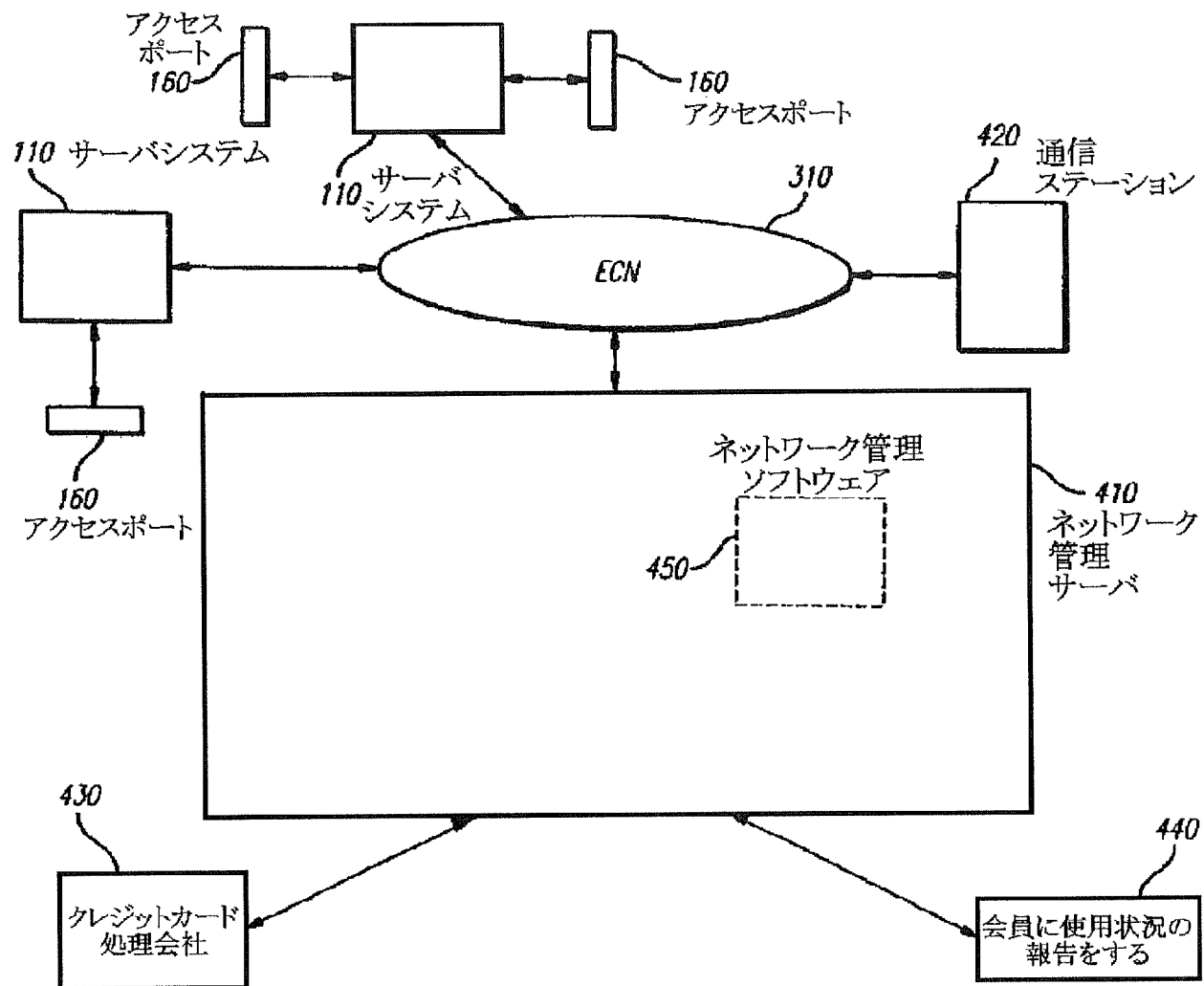


FIG. 26

ポートID	アクセス ポート1	アクセス ポート2	アクセス ポートN
クライアントIP アドレス	XXX	YYY	NNN
クライアント ネットワークカード MAC アドレス	XXX	YYY	NNN
サーバネットワーク カードID	XXX	YYY	NNN
ユーザネーム	XXX	YYY	NNN
支払タイプ	XXX	YYY	NNN
クレジットカード 番号	XXX	YYY	NNN
クレジットカードの 保持者名	XXX	YYY	NNN
クレジットカードの 有効期限	XXX	YYY	NNN
ポートの状態	XXX	YYY	NNN
アクセスカード番号	XXX	YYY	NNN
・ ・ ・	・ ・ ・	・ ・ ・	・ ・ ・

FIG. 27

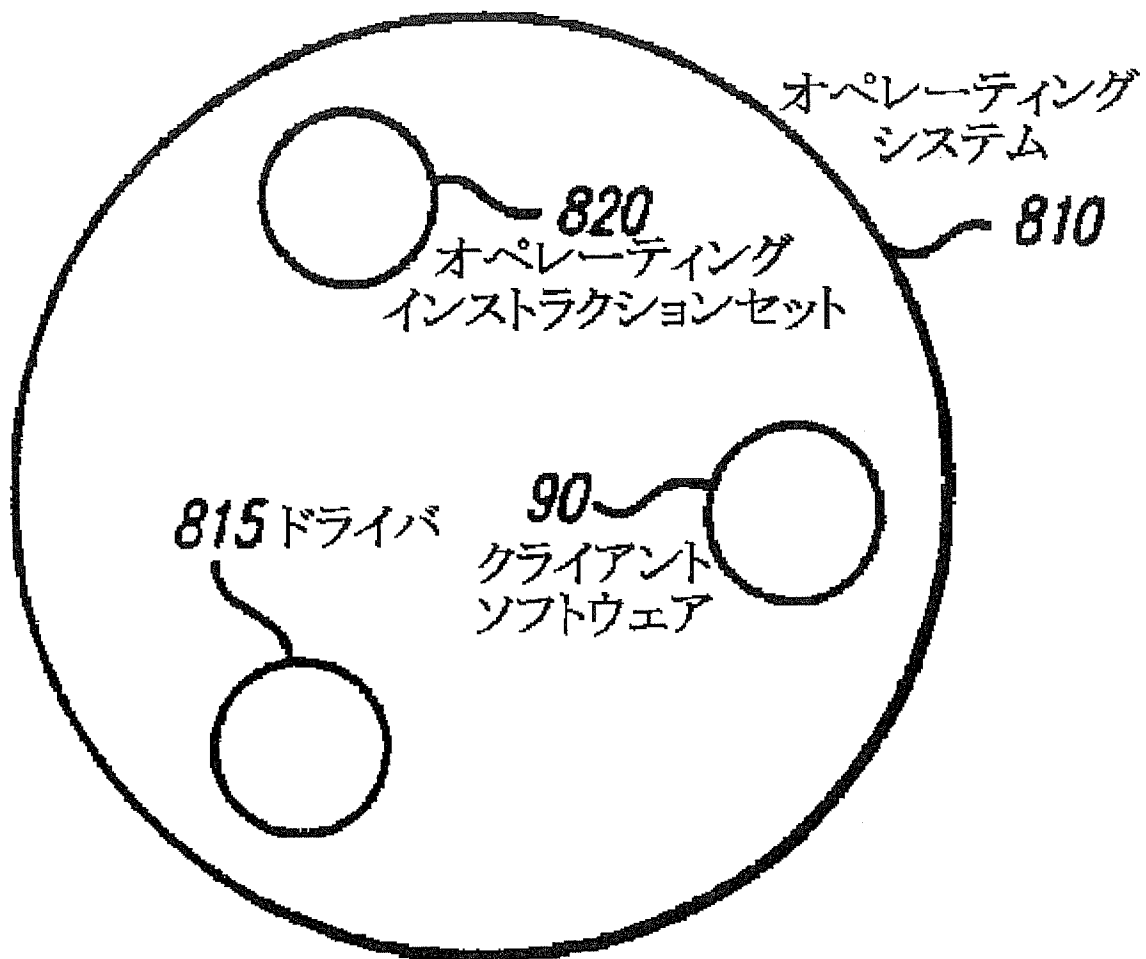


FIG. 28

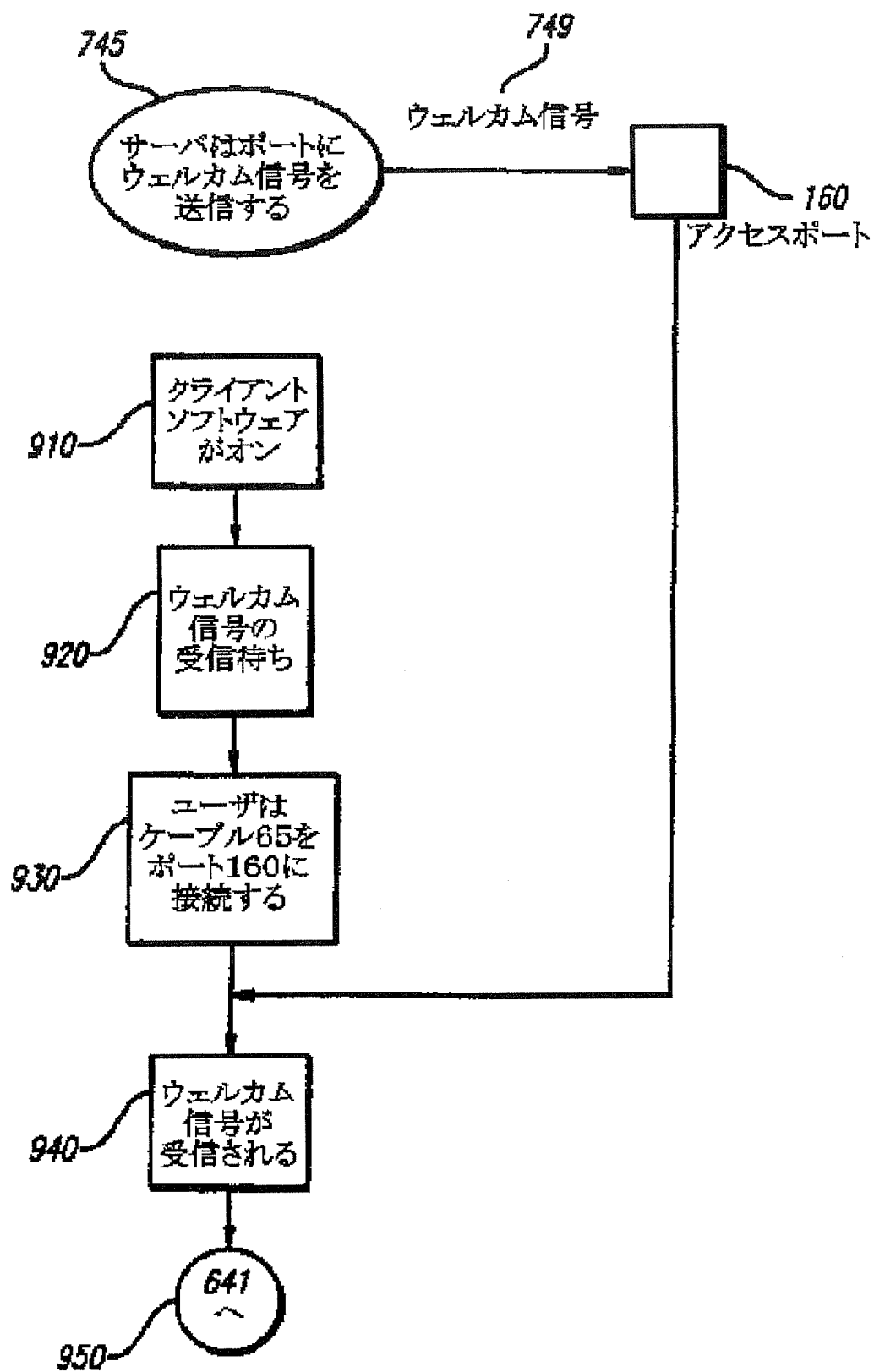


FIG. 29

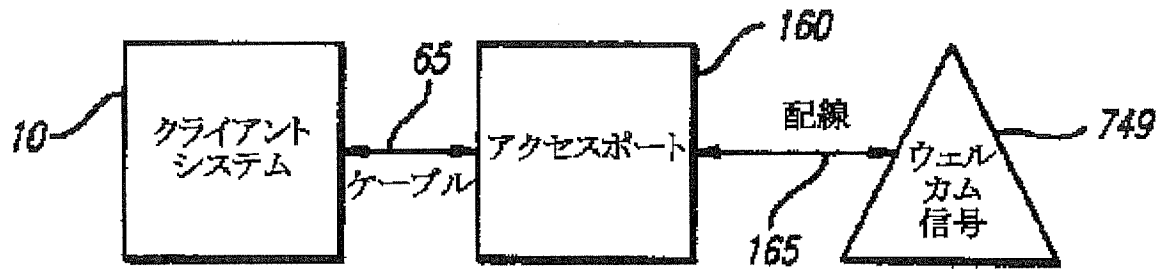


FIG. 30

